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FACT BOOK OF U.S. AGRICULTURE

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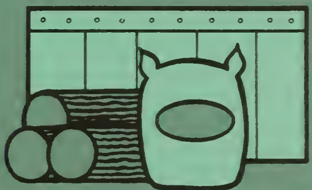

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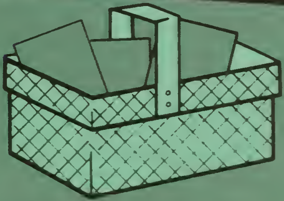

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To the Reader

The U.S. Department of Agriculture has many specialized and statistical publications, but this is USDA's only narrative summary of U.S. agriculture as a whole. *Fact Book of U.S. Agriculture* contains selected basic information on agricultural resources, production, finance, and marketing. It is intended for the nonspecialist, but anyone who writes or talks about agriculture may find it useful as a general reference.

More detailed general information and tabulations will be found in *Agricultural Statistics* and in the *Handbook of Agricultural Charts,* both revised yearly (for sale at $1.75 and $.45, respectively, by the Superintendent of Documents, U.S. Government Printing Office, Washington, D.C. 20402).

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RESOURCES

1. LAND

In the 50 States there are nearly 2.3 billion acres of land. About 80 percent of it, including the forest land, can be used for agriculture.

Without conservation measures, large amounts of topsoil and sometimes acres and square miles of land can be lost to the sea. Improperly used, land becomes scarred and barren. In theory, however, the four basic resources of agricultural land—soil, water, grass, and forests—are endlessly renewable. With the means and methods of production based on the knowledge now at hand, land can be used and replenished indefinitely.

More than 60 percent of the land area in the 50 States is privately owned. All U.S. citizens share in the Federal ownership of a third of the Nation's land area. Federally owned land is used for timber, grazing, mineral development, parks, national monuments, wilderness and primitive areas, and other public purposes. National Forests and Grasslands total 186 million acres. The people, through State and local governments, share also in the ownership of about another 5 percent of the land area of the United States.

2. WATER

Land usable for agricultural production requires water. The presence of water, or access to it, is often taken as a part of the meaning of the word "land." For farm purposes, one is worthless without the other.

In the average year, some 30 inches of precipitation fall on the 48 States of mainland U.S.A.—a total of 4.8 billion acre-feet. Over the years, this amount does not vary significantly.

Two-thirds of all this water never reaches streams but sustains vast acreages of crops, pastures, rangeland, and forests. The other third finds its way into streams, where it can be used for navigation, recreation, power-generation, or diverted from streams (and pumped up from underground) for irrigation and other purposes.

As long as the quality of the water is maintained, water that is withdrawn and then returned to streams may be used again. Only water that is "used up" and not returned to streams reduces the total water supply. Of the water so "used up" 9 out of every 10 gallons is used for agriculture—that is, it goes into livestock and plants, including weeds.

As our Nation grows, the use of water will increase. By 1985 farmers will withdraw 25 percent more water than they did in 1960. The use of water by cities and industries will increase at an even faster rate. But by 1980, 85 percent of the water should be available for re-use, compared to 75 percent in 1960. There will be more "used" water because consumptive use (water "used up") is smaller for cities and industries than it is for agriculture. Increased efficiency and greater reliance on ground water will decrease net use of water per acre of irrigated land.

In some regions of the United States during some seasons the supply of available water has been limited in recent years. The actual supply of water will not increase (though more usable water might be obtained by desalting ocean water). Therefore, the availability of water where it is needed in the future depends upon better water management. In many Western States, current water use is already pressing heavily on available supplies. In the East, city and industrial demands have created supply and treatment problems. Water pollution is today a major conservation problem.

3. KINDS OF LAND

The first National Inventory of Soil and Water Conservation Needs was completed in 1961. The Inventory analyzes current use of lands and trends of land use in terms of a land capability classification introduced by the Department of Agriculture 25 years ago.

The classification of land by capability has two broad groupings: (1) land generally suited for cultivation, and (2) land generally suited only for uses other than cultivation.

Under each broad grouping are four narrower classes. Land is assigned to one of the eight classes, ranging from Class I (few or no limitations or hazards for agricultural use) to Class VIII (many limitations). Class I land is suited for crops, for pasture and range, for woodland, and for wildlife. Class VIII land, the "bottom" class, is suited only for recreation, wildlife, or water supply.

Nearly half of all privately owned agricultural land, about 640 million acres, is suitable for regular cultivation (Land Capability Classes I, II, and III). Almost 60 percent of this acreage is now being used for cropland. The remaining 40 percent can be used when it is needed.

Nearly 50 million acres which should not be used as cropland (according to its land capability classification) are in fact under cultivation. (This amounts to about 30 percent of the 170 million acres of Class IV land.) The use of this land for crops creates a continuing conservation problem.

Land in the other four classes is used mainly for grazing and forest, for which it is best suited. Nevertheless, about 25 million acres in V to VIII classifications are being used as cropland.

The Conservation-Needs Inventory, through its basic soil and land-use data, offers a nationwide county-by-county guide to land use which can be consulted by industrial representatives, regional planners, and other citizens. Soil surveys, new combinations of farming practices and technology, and land-capability classification point the way to more efficient long-term systems of private management of land and water for the public good.

4. FARMING REGIONS

The nine major farming regions in the United States differ in soils, slope of land, climate, distance to market, and in storage and marketing facilities. Together they give a glimpse of the agricultural face of the Nation. Nearly everyone who has traveled widely in this country has a "feeling" for them.

The *Corn Belt* has deep, rich soils suitable for mechanized farming. Temperatures and rainfall favor corn, the preferred livestock feed. Corn, beef cattle, and hogs are the major outputs of farms in the region. Soybeans and wheat are also important. Other products of the region are oats, barley, grain sorghums, poultry and eggs, dairy products, and, in several localities, fruits and vegetables.

In the *Cotton Belt* States the principal cash crop is cotton. Tobacco, peanuts, fruits, vegetables, rice, and sugarcane are also grown. With improved pastures, livestock production has gained in importance. Corn is grown for poultry and livestock feed. Poultry and eggs and dairy products are of growing importance.

The *Lake States* and *Northeastern* regions are the Nation's principal dairy areas. They are adapted to forage, small grain, and pasture crops. Some areas produce fruits, vegetables, and poultry.

Agriculture in the *Great Plains* is restricted by low rainfall and, in the northern part, by cold winters and short growing seasons. Nearly two-thirds of the Nation's winter and spring wheat is produced in the region. Other small grains, grain sorghums, hay and forage crops, and pastures form the basis for cattle and dairy production. Flax, potatoes, and sugar beets are adapted to some localities.

The *Southern Plains* is a major cotton area. Large, level fields have enabled the Plains to become one of the most highly mechanized farming regions. The *Pacific Northwest* is similarly highly mechanized and productive of wheat.

Vast areas of the *Western* and *Southwestern* States are suited for cattle and sheep production on ranges. Low rainfall limits cultivation of crops, but irrigation in scattered valleys makes possible such crops as sugarbeets, potatoes, beans, fruits, vegetables, and alfalfa hay.

5. FOREST LAND

One-third of the United States is forested. Seventy-three percent of the Nation's commercial forests are east of the Rockies, mainly in the Southeast. Ninety-seven percent of the private forests are in the East.

Private forests are most often not large. Some 4.5 million individual ownership units average 49 acres in size. Eighty-six percent of these units are forest tracts of less than 100 acres. About three-fourths of all small forests are on farms. One-fifth of all farm acreage is forested. Although these farm forest tracts average only 49 acres, they account for one-third of the Nation's commercial forest land.

Three-quarters of the Nation's timber production comes from private forests. The remaining one-fourth is the product of the National Forests.

Timber harvest from National Forests has grown steadily in the past 6 years. In 1959 it came to 8.3 million board feet; in 1966 it reached an all-time record of 12.1 million board feet. This timber harvest would provide enough lumber for 1.2 million homes—enough to house the population of metropolitan Philadelphia. Under sustained yield management and improved forestry practices, this vast amount of timber, and even greater cuts, can be harvested from National Forests year after year—forever.

The National Forests and Grasslands are under the management and direction of the USDA Forest Service, which also has the responsibility of offering technical assistance and cooperation in the protection and development of private forests. In 1966, 113,000 small woodland owners got some technical help from the Forest Service. Organized fire protection, in cooperation with State and private forest owners, was extended to 91 percent of the 519 million acres of forest land in the United States.

6. "INPUTS" FOR AGRICULTURE

The basic "inputs" for agricultural production—land, labor, and capital—are usually listed in five major subgroups: Farm labor; farm real estate; mechanical power and machinery; fertilizer and liming materials; and feed, seed, and livestock. A sixth catch-all subgroup is labeled miscellaneous.

Farm labor includes the total man-hours of hired and operator and family labor used in agricultural production.

Farm real estate is measured by interest on land and service buildings; depreciation, repairs, and accidental damage to service buildings; and grazing fees on land not in farms but included in farm operations.

Mechanical power and machinery includes interest on the inventory value of automobiles, motortrucks, tractors, and other farm machinery; depreciation, repairs, parts, and tires for these items; licenses and insurance on automobiles and motortrucks; fuel, oil, and electricity used for production; and blacksmithing, hardware, small handtools, and harness and saddlery. Custom work done by farmers is included as an input.

Fertilizer and liming materials includes tons of principal commercially produced plant nutrients [Nitrogen (N), Phosphorous (P), and Potassium (K)] and tons of liming materials, along with many so-called "minor" elements.

Feed, seed, and livestock includes that portion of feed, seed, and livestock purchases resulting from activities of the nonfarm sector; for example, feed and seed processing, transportation, chicks produced by commercial hatcheries, and marketing service charges.

Miscellaneous includes real estate and personal property taxes; interest on livestock and crop inventories; interest on operating capital; livestock marketing and milk-hauling charges; expenditures for containers; fire, wind, and crop-hail insurance; greenhouse and nursery supplies; binding materials; pesticides; irrigation operation and maintenance; sorgo and sugarcane tolls; veterinary services; dairy supplies; telephone (production portion); and ginning charges.

Land is no longer the major production tool. The productivity of the land now depends upon the skill and knowledge with which capital is applied—the use of mechanical power and machinery, fertilizer, lime, better seed, the use of disease and pest control chemicals, and the technology applied to conserve and enhance the land while in productive use. The total of all resources used in agriculture—land, labor, machinery, and supplies—has increased only 26 percent since 1910. But farm production has more than doubled.

Index numbers [1] of total farm inputs, and inputs in major subgroups, 1955-1965.

(1957-59=100)

Year	Total inputs			Farm labor	Farm real estate	Mechanical power and machinery	Fertilizer and liming materials	Feed, seed, and livestock purchases	Miscellaneous
	All	Nonpurchased	Purchased						
1955	102	111	97	120	100	99	90	86	94
1956	101	108	98	113	99	99	91	91	98
1957	99	101	97	104	100	100	94	93	95
1958	99	99	100	99	100	99	97	101	100
1959	102	100	103	97	100	101	109	106	105
1960	101	96	103	92	100	100	110	109	106
1961	101	93	106	89	100	97	116	123	109
1962	101	90	107	85	101	97	124	121	113
1963	102	90	109	83	101	99	141	124	115
1964	103	86	114	79	102	101	155	123	120
1965	103	86	113	75	100	101	163	124	124

[1] An index number is one used to indicate change in magnitude (as of cost or price) as compared with the magnitude at a specified time taken as 100.

7. FARMS AND LAND IN FARMS

For the purposes of the Agricultural Census, taken every 5 years by the Bureau of the Census, Department of Commerce, the definition of a farm is a place of less than 10 acres if estimated sales of agricultural products amounted to $250, or a place of 10 or more acres if sales of agricultural products amounted to at least $50 a year. Places having less than the $50 or $250 minimum sales are also counted if they normally produce agricultural products in sufficient quantity to meet the requirements of the definition—even if, in the year of the census, they did not.

The number of farms within this definition has declined one-fifth since 1959. The amount of land in farms has decreased 3 percent. The average-size farm in 1966 was 350 acres—one-fifth larger than 7 years ago. The decline in the number of farms is due primarily to the discontinuance of small farming enterprises and the merging of larger units with existing farms.

In 1965, 3,380,000 farms were in operation—3 percent under 1964.[1] In 1966 the total number of farms was approximately 3,258,000. The preliminary estimate for 1967 is 3,176,000.

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[1] Data on number of farms, average-size, and total farmland acres are USDA estimates, based on Census of Agriculture data adjusted for incompleteness. The 1964 Census of Agriculture gives 3,157,864 as the total number of farms.

The amount of land in farms in 1966 was 1,145,000 acres (including Hawaii and Alaska).

Number of Farms and Land in Farms, U.S. 1959-67

Year	Farms (Thousands)	Land in Farms (Thousand Acres)	Average size of Farm (Acres)
1959	4,105	1,182,658	288
1960	3,956	1,177,565	298
1961	3,818	1,172,910	307
1962	3,695	1,168,115	316
1963	3,580	1,163,180	325
1964	3,479	1,158,505	333
1965	3,380	1,154,560	342
1966	3,258	1,145,170	351
1967[1]	3,176	1,139,644	359

[1] Preliminary.

In order to separate those farms which provide major sources of employment and income from those which provide part-time employment, the Agricultural Census uses a definition of commercial farms. Commercial farms are those which have a total sales of farm products of $2,500 or more; and those with a total sales of $50 to $2,499, provided the farm operator is under 65 and works off the farm less than 100 days each year.

Within the limits of this definition, there were about 2 million commercial farms in operation in 1965. That year more than 1.4 million farms—42.9 percent of the total number—had sales under $2,500.

8. FARMS BY SALES CLASSES★

In 1966 the average net income of farms in the lowest sales class (under $2,500) was $796. On the average, these farms received over four times as much off-farm income—$3,719.

Some of the 1.4 million farms with under $2,500 yearly sales had high off-farm incomes; others had low off-farm incomes, or none. All were below $2,500 in annual sales; some were far below. Many were meant to be part-time farmers; others were subsistence farms whose operators and families were underemployed and lived below the poverty level of income.

Of the realized net income from farming in the United States in 1966—$16.4 billion—these 1.4 million farms, 43.4 percent of the total number, received 6.8 percent.

Farms in the highest class by value of farm sales—$20,000 or more yearly—numbered 527,000 (16.2 percent). Their realized

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★ The data used in this sequence are those of *Farm Income Situation* report, FIS–207, July 28, 1967, pages 69-73.

net per farm averaged $17,539. In the aggregate they received 56.4 percent of the total realized net farm income.

The second highest class by sales were the 510,000 farms with sales of $10,000 to $19,999. Realized net farm income for this class amounted to 21.3 percent of the total, an average per farm of $6,869.

These two top sales classes—an estimated 1,037,000 farms—accounted for $39.7 billion in cash receipts (including Government payments) of the $46.5 billion, 1966 total for all farms. The two top groups with annual sales over $10,000, comprising 31.9 percent of all farms, accounted for 85.4 percent of the cash receipts and 77.7 percent of total realized net farm income.

The number of farms with more than $10,000 yearly sales gained 25 percent from 1959 to 1966. Those in the other three classes declined 32 percent.

The $5,000 to $9,999 sales group had 446,000 farms in 1966. This group had cash receipts of $3.7 billion, which was 7.9 percent of the national figure. Net income was about $1.8 billion, or 10.8 percent. Per farm, they averaged $3,989.

Cash receipts for the $2,500–$4,999 class were $1.5 billion (3.2 percent). Realized net incomes for these 356,000 operators totaled $770 million, or 4.7 percent. The group averaged $2,163 per farm.

As noted, farm families in the lowest sales group in 1966 received, on the average, over four times as much off-farm income as net farm income. Many farm families in each of the other sales classes also received substantial nonfarm income. Even families in the $20,000-and-up sales group (realized net, $17,539) averaged $2,252 from off-farm income. Those in the $10,000–$19,999 class averaged $1,594 per farm—less than the $1,913 for the $5,000 to $9,999 class, or the $2,239 for the $2,500 to $4,999 class, but still an appreciable addition to family income.

For the past 3 decades it has been evident that a decreasing proportion of the farms provides an increasing share of the production. The 1.4 million farms representing 43.4 percent of all farms with gross yearly sales under $2,500 accounted for only 3.5 percent of the sales of farm products in 1966. Most of the operators of such farms are part-time farmers and receive more than half of their incomes from off-the-farm sources. Many are retired persons with more or less adequate pensions or social security benefits; many lack adequate incomes.

More than four-fifths of all farm products going to market are produced on farms with gross sales of $10,000 or more. The

30,000 farms at the top in yearly sales have marketings valued in excess of those of the 1 million farms with the lowest marketings per farm. The 30,000 highly prosperous farm enterprises get returns far in excess of the average realized net income per farm. Conversely, the bottom 1 million fall far short of attaining farm income.

The upper income group of around 1 million farms make up the commercial agricultural economy of the United States. The operators of these farms do the buying and selling that turn the wheels of an enormous agricultural business and food marketing complex.

9. FARMERS

Many persons recall when farming meant a few cows, a few chickens, a pig or two, a garden, and a small cash crop. Many such farms still exist. On the other hand, only a relatively small number of farms are the factory type. Most farms lie somewhere in between these two extremes.

A farmer has been defined as one who makes his living entirely from farming; also as one who makes some of his living from farming; and as one who lives on a farm, or who owns a farm. The Census Bureau does not define the word "farmer" but uses instead the term "farm operator"—"a person who operates a farm, either by doing or supervising the work."

According to this definition, a farm operator could be one who supervises the work on a small farm of no commercial importance, or one who supervises a highly productive commercial farm while engaged in another profession or directing other business enterprises.

The owner of a 320-acre grain-livestock farm with $100,000 invested in equipment, buildings, and livestock, who lives in a modern air-conditioned home, is called a farmer. So is the man with a capital investment of $1 million or more. So is the sharecropper, farming a few acres, whose home is a shack.

The orange grove owner in Florida, the dairyman in Minnesota, the apple grower in New York, the egg producer in California, the wheat farmer in the Dakotas, the cattleman in Texas—all of these are farmers, though their work and ways of life differ greatly.

10. FARM POPULATION

Many persons are called farmers who in urban surroundings would be counted among the unemployed—or among those only infrequently employed. In search of ways to earn a better livelihood, large numbers of these have moved, and are continuing to move, to the cities. The farm population continues to decline. An estimated 11.5 million people lived on farms in 1966. In 1965 the figure was 12.4 million; in 1964, 12.9 million. (The 1964 Census of Agriculture places the total number of persons in farm-operator households at 11,250,173.)

All major regions showed a farm population decline in 1964-65, but their relative positions in regard to farm population stayed the same as in 1960. The South, with 45 percent of the total farm population, still has the largest share. The North Central Region contains 38 percent of the people on farms, the Northwest, 7 percent, and the West, 10 percent.

The United States is rapidly becoming a nation of urban dwellers. Fifty metropolitan counties gained one-half of the national population increase from 1950 to 1960. It is estimated that by 1980, 183 million, or three-fourths, of the Nation's population (projected at 245 million) will reside in urban areas.

Rural America is undergoing a transformation. Its population, traditionally thought of as largely farm people, actually is becoming predominantly nonfarm. Nonfarm residents made up 57 percent of all rural people in 1940, 71 percent in 1960, and their numbers are projected at 52 million in 1980, or 86 percent of all rural people. If present trends continue, only 1 rural resident in 7 or 8 will live on a farm in 1980.

11. HIRED FARMWORKERS

About 3.1 million persons did some work on farms for wages in 1965. This represents a decline of 7.2 percent from the estimated number of hired farmworkers in 1964. Casual workers (those who did less than 25 days of farm wage work) numbered 1.3 million. Those who did more than 25 days work—1.9 million. Only about a fourth of these were engaged chiefly in farm wage work, and 70 percent of them did not live on farms. More than half lived in the South. The average annual employment of hired farmworkers in 1965 was 1,482,000; in 1966, 1,357,000.

As a group, hired farmworkers earned about $7.55 a day in cash wages from their farm wage work in 1965. For an average of 85 days of such work, they earned $650. The wage figures do not include the value of anything furnished without charge by the employer.

The general range of farm wage rates may be seen in the following table:

	Annual average 1966	January average 1961-65	January 1, 1966	January 1, 1967
FARM WAGE RATES				
Composite rate per hour	$ 1.03	$ 0.952	$ 1.06	$ 1.14
Per month with house	243.00	206.00	228.00	249.00
Per month with board and room	185.00	162.00	178.00	193.00
Per week with board and room	43.50	36.50	40.50	44.00
Per week without board or room	55.75	48.00	51.25	55.50
Per day with house	6.70	5.80	6.80	7.20
Per day with board and room	8.00	6.70	7.40	8.00
Per day without board or room	8.20	6.90	7.70	8.40
Per hour with house	1.10	.88	.97	1.04
Per hour without board or room	1.23	1.13	1.24	1.33
INDEXES				
(1910-14=100)	792	666	738	799
(1957-59=100)	136	115	127	137

During the survey week of January 22-28, 1967, the Nation's farm work was performed by 3,715,000 persons. This was the smallest total for any week on record. While persons working for pay totaled 686,000, up 10,000 from January 1966, the 3,029,000 farm operators and other family workers were 3 percent below the number recorded for the same week in 1966. The following table shows farm employment and indexes, January 1967, and comparisons with previous years in this decade:

	Annual average 1961-65	Annual average 1966	January average 1961-65	January 23-29, 1966	January 22-28, 1967
FARM EMPLOYMENT (Thousands)					
Total	6,372	5,259	4,565	3,810	3,715
Family labor	4,655	3,902	3,725	3,134	3,029
Hired labor	1,717	1,357	840	676	686
INDEXES					
(1910-14=100)					
Total	47	39	47	39	38
Family labor	46	38	47	39	38
Hired labor	51	40	51	41	41
(1957-59=100)					
Total	85	70	86	72	70
Family labor	84	71	86	72	70
Hired labor	88	69	88	71	72

About 5.2 million (including farm operators) were employed in farming in 1966—a decrease of 400,000 workers or 7 percent from 1965. The annual decrease from 1959 to 1963 was 182,000 workers or 2.8 percent per year.

The hourly equivalent of all types of wage rates averaged $1.03 per hour in 1966—8 cents higher than in 1965. (The comparable figure for industrial workers in 1966 was $2.71.)

12. THE FAMILY FARM

A family farm may be defined as a risk-taking business in which the operating family takes most of the risks and does most of the work. Such a family may be full owners, part owners, renters, or contract farmers. In terms of the labor required, a family farm is one that requires no more than the full-time work of three people. A larger-than-family farm is a farm business for which most of the labor is hired.

Family-size farms accounted for 67 percent of all farm marketings in 1944, 71 percent in 1959, and 73 percent in 1964. The number of family farms which sell $10,000 or more each year of farm products is increasing; the number of farms in all other sales classes is declining.

Because of the large amount of capital needed to operate highly productive family farms, some are becoming formal partnerships and family corporations in order to pool financial resources and to obtain credit.

Many larger-than-family size farms that approach a factory-type system of labor have been developed, notably in California, Florida, Arizona, and southern Texas. The largest numbers of hired farmworkers find employment in these States. These large commercial farms are growing in importance in terms of farm marketings, but the family farm is still the predominant type of operating unit in U.S. agriculture. A family farm may be much larger today than in the past, but the amount of labor required to farm it is smaller. Mechanized farming has limited the need for many hands.

13. MECHANIZATION AND SPECIALIZATION

Tractors and other farm machines have brought great increases in the area of land a man can handle. Years ago, a man with a good team of horses would plow about 2 acres a day. Today mechanical power makes it possible for him to plow 10 to 100 times that much. Power has been applied to other farmwork with similar increases in efficiency. The substitution of machines for hired labor has permitted some farms that were once larger-than-family size to drop into the family-size category.

Along with mechanization, specialized farming has increased. While diversified farming has much in its favor, lower returns from some crops than from others tend to bring about specialization in the production of the one that pays best. Further, it is expensive to buy the variety of equipment needed for diversified farming on a profitable scale. It takes a high degree of skill and knowledge to compete successfully in the production of any farm product. Many farmers specialize partly because they find they can be experts in only a limited number of farming operations. For many, specializing in one crop gives the best rate of return for their labor and investments.

The farm operator who does well today uses knowledge of genetics, land and water conservation, chemistry, physics, and business management. He performs many jobs with complex tools and machines. He combines science and machine power with the ancient arts of tilling the soil.

14. AGRICULTURAL RESEARCH

U.S. capability for high agricultural productivity is in part the result of a century of agricultural research. The application of the results of research has brought enormous increases in agricultural and forestry production and has improved methods in the processing and distribution of farm products.

Research has given farmers more control over nature; increased production; and reduced crop risks. Research has resulted in the development of high-yield seeds, crop varieties that resist drought and diseases, better fertilizers, more effective pest-control methods, and effective control of animal diseases. The 1963 farm output was produced with inputs estimated to be $17 billion lower in cost than would have been required with the technology of 1940.

The cumulative savings since 1940, based on this estimate, would be more than $200 billion. During this period of 23 years, the Department of Agriculture, State agricultural experiment stations, and industry spent an estimated total of $8 billion on agricultural research.

No formal estimates have been published on savings in goods and services from improved refrigeration, transportation, control of quality depreciation, terminal market design, new food and industrial products, improved cotton and wool fabrics, and other off-farm improvements, but the savings would amount to billions of dollars.

Yet all the research that has gone before provides only the rudiments of research in the future. At the most practical level—in dollars—there are still many possible areas where savings can be realized.

For example, the cost of insect, disease, and weed control now costs more than $1.4 billion per year. Despite this great expenditure, crop and livestock scourges still reduce production by at least 20 percent.

The extensive use of improved chemical fertilizers has increased farm production, but a large part of the fertilizers used is not recovered in the form of crops. Present production practices use only a small fraction of the sun's energy; the use of water is far from fully efficient. Still better seeds, and high-yield disease-resistant varieties of plants and breeds of livestock have yet to be produced.

It now takes 10 pounds of feed to make a pound of beef (on the hoof). If beef production efficiency were to increase as much as broiler production efficiency—40 percent in the past 25 years—beef production costs would drop by more than $1.5 billion per year.

At the present time, 57 percent of all agricultural research is concerned with agricultural production needs and the capacity to meet future needs, 32 percent with processing, product development, and improved marketing efficiency, and 2 percent with expanding exports and assisting developing countries.

The remaining 9 percent is devoted to research related to the physical, social, and environmental well-being of the general public, with only a small part of this aimed at the specific needs of rural people and communities. Eighty-five percent of the research effort is in the biological sciences, 9 percent in the physical sciences, and only 6 percent in the social sciences.

In 1965 the commercial agricultural industry spent about $460 million on agricultural research and development. The Department of Agriculture and State agricultural experiment stations expended another $394 million.

Industry conducted 53.9 percent of this research; State agricultural experiment stations, 26.6 percent; and the Department of Agriculture, 19.5 percent. Other universities and Federal agencies conducted research relevant to agriculture which cost $365 million. The 53 State agricultural experiment stations get 52 percent of their support from State appropriations, almost 33 percent from Federal sources, and the remaining 15 percent from industry, product sales, and other sources.

The number of dollars spent or saved gives only an indication of the value of research. No dollar value can be assigned to the worldwide usefulness and worth of scientific research related to agriculture. The added years of human life made possible by proper nutrition, for example, have no price. At the same time, if the growing world population is to have enough to eat, research must ultimately point the way.

A visionary in agricultural science has said that a solution of the world food problems on earth would be equal to man's "arrival on the moon or the planets." And the future of agricultural research holds much more:

"Tomorrow's science in agriculture is not merely a matter of removing scarcity from the earth. Intellectually, these are complex and elegant inquiries. These problems represent life processes so complex that they involve all the theories and unknowns in the physical world, the secrets of living things, and a largely uncharted area of inquiry into the behavior of people who live in concourse in so many different ways." [2]

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[2] *A National Program of Research for Agriculture,* prepared by the Association of State Universities and Land Grant Colleges and by the U.S. Department of Agriculture. p. 19. August 1, 1966.

PRODUCTION

15. RISE OF U. S. PRODUCTION

Farmers in the U.S. today produce 2½ times as much per man-hour of work as in 1950, and over 5 times as much as in 1930. Although vast acreages were held out of crop production between 1950 and 1965, total U.S. farm output increased 1¼ times as fast as U.S. population.

This table shows agriculture's productivity since 1930:

Years	U. S. Population (July 1-Mils.)	Total Farm Output 1957-59 =100	Persons Supplied Per Farm-worker	Output Per Man-Hour 1957-59 =100	Cropland Harvested (Mil. Acres)
1930	123.1	61	10	28	360
1940	132.1	70	11	36	331
1950	151.7	86	15	61	336
1955	165.3	96	19	80	333
1960	180.7[1]	106	26	115	317
1965	194.6[1]	115	37	153	295
1966	196.8[1]	113	39	157	292

[1] Includes 50 States.

For 37 years agricultural productivity in the United States has been rising. An annual increase in farm production has come to be taken for granted, but in the early decades of this century farm production was almost at a standstill. If it had not begun and maintained its steady rise, world history in recent decades would have been quite different. Agricultural productivity in the United States remained virtually unchanged from 1910 to 1930; it rose an average of 1.3 percent annually in the 1930's, 1.7 percent in the 1940's; since 1950 it has had an average annual increase of 1.9 percent.

In 1910, only 7 persons were supplied farm products by 1 farmworker. In 1966, 1 farmworker supplied himself and 39 others. Agricultural production today uses one-third as much farm labor as in 1910.

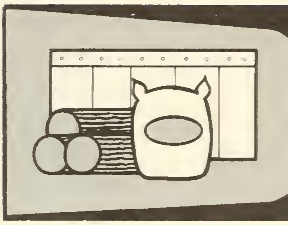
In 1964 the total agricultural and timber complex accounted for more than 25 percent of the gross national product. Out of every 100 jobs in private employment, 33 were related to agriculture or forestry.

The population of the United States is expected to be 245 million in 1980. The 1980 gross national product (value of all goods and services produced by the economy) is projected at more than 80 percent higher than in 1964, an increase of 3.9 percent per year. In 1980, the U.S. population is expected to consume one-third more farm products than in 1964. To meet this demand alone, U.S. agricultural productivity must increase at an average yearly rate of more than 2 percent.

All the evidence indicates that U.S. agriculture can maintain this rate of yearly increase in productivity—and attain even higher rates, if necessary—during the next 15 to 20 years.

16. EXAMPLES OF RECENT PRODUCTION

Crop production in 1966 tied 1963 as the second highest on record. The year 1965 was the highest. However, soybeans, rice, sorghum, and peanuts had new record yields in 1966. Acreage harvested for the 59 major crops was 288 million acres—1 percent less than in 1965.



Feed grains: Production of the four feed grains (corn, barley, oats, and sorghum) in 1966 totaled 157.2 million tons. This was slightly less than output in 1965 when the total was 157.4 million tons. The 1966 corn crop was a record high of 4,103 million bushels. Production of sorghum, at 720 million bushels, was also a record high.

Food grains: Combined food grain production (wheat, rice, and rye) in 1966 was 44.4 million tons, slightly above the 44.2 million tons produced in 1965 and 9 percent above average. Production of *all wheat* was 1,311 million bushels. By classes, production of hard red winter wheat totaled 676 million bushels, up 0.5 percent from 1965; soft red winter, 213 million, up 15 percent; hard red spring, 181 million, down 14 percent; durum, 63 million, down 9 percent; and white, 178 million, down 1 percent. *Rice* production in 1966 was a record 85.1 million cwt., 12 percent above 1965, resulting from a 10-percent increase in acreage and a record high yield. Production of *rye* was 27.9 million bushels, 16 percent below 1965 and 14 percent less than average.

Soybeans: U.S. soybean production has tripled since 1950, primarily because of a similar increase in harvested acreage. Since 1956, U.S. average yields have varied between 21.8 bushels per acre that year and the 1966 peak of 25.4 bushels. The 1966 soybean crop was 931 million bushels—10 percent above 1965. Less than 2 million acres were planted to soybeans in 1925. By 1947, 13 million acres were planted. In 1967 some 40 million acres will be planted.

Milk: The average number of milk cows has declined every year since 1953, from 21.7 million to about 14.6 million in 1966. For the same period, milk output per cow has gained an average of 212 pounds per year. A greater than usual decline in milk cow numbers and below average production gains per cow dropped 1966 milk output 3.2 percent from the 1965 level of 124.2 billion pounds. Relatively favorable beef prices during the first half of 1966, poor feed conditions in some major milk-producing States, and attractive off-farm opportunities for dairymen contributed to the 1966 changes.

Milk cows and heifers 2 years and older on farms totaled 15.2 million on January 1, 1967. This was 5 percent below a year earlier—a smaller decline than the 6 percent during 1965.

Livestock and Poultry Inventory: On January 1, 1967, there were 108.5 million cattle and calves on farms and ranches, a slightly smaller number than the revised level of 108.9 million head a year earlier. This was the second year of decline. An increase of 1 percent in beef cattle was more than offset by 5 percent decrease in dairy cattle. Number of cows and heifers 2 years old and older kept for milk decreased 5 percent to 15.2 million head—smallest number since 1893. Inventory of hogs and pigs on farms was 51.0 million head, an increase of 8 percent. All sheep and lambs totaled 23.7 million head, 4 percent below revised level of a year earlier, and the smallest inventory since records began in 1867. Number of stock sheep and lambs declined 4 percent while sheep and lambs on feed was down 6 percent. Number of chickens on farms increased 9 percent to 427.6 million head on January 1, 1967, while number of turkeys increased 6 percent to 7.3 million head.

17. PROBLEMS OF PRODUCTIVITY

Agricultural productivity has grown faster than any other segment of the economy. U.S. agricultural abundance is the envy of most nations in the world. Yet the incomes of most farm families continue to be lower than those earned in many other occupations. And employment in agriculture continues to decline.

While farmers are able to produce a great deal more each year, the U.S. population is not able to consume a great deal more. As incomes increase, a smaller percentage of the increased income is used to buy food and other farm products. During the past 50 years, disposable real income per person has doubled, but the per capita consumption of farm products has risen only 17 percent. The richer people are, the better they eat and the better they dress. But they do not eat a great deal more. When people have high incomes, they spend most of their money for goods and services that do not come from farms.

Further, the productivity of farmworkers has been increasing much more rapidly than the productivity of most other workers. This tends to depress farm prices. Lower prices for products originated on farms do not bring a marked increase in the consumption of those products.

Increased productivity per worker has eliminated many jobs in farming. Uprooted by technological progress, many former farmworkers find it difficult to get other employment. Thousands of low-income farmers find it impossible to stay in business.

To make more efficient use of expensive farm machinery, more acreage is required. More acreage makes possible the use of still larger and more expensive equipment and thus speeds the decline in the number of farms and farmworkers.

As farm job opportunities decline, a farm labor surplus is created and wages remain low. And as the number of farms decline, capital requirements per farm increase, making it extremely difficult for a young farmworker to earn enough to purchase an equity in a profitable farm. In the last decade about 80 percent of farm-reared youth have had to find jobs outside of commercial farming.

18. WORLD FOOD PRODUCTION

World output of food products in 1966 resumed the long-term upward trend, increasing almost 5 percent (excluding Mainland China), compared to the world population increase of about 2 percent. During the past decade, food production has increased at a faster rate in the less-developed countries than in the developed countries, but the per capita trend in the less-developed countries has been dampened by a high rate of population growth. (The rise in total world food production should not be confused with the low level of production in relation to the growing population in some less-developed countries.)

In the past decade there was some improvement in per capita food production in India until the severe drought of 1965. In 1966, per capita production recovered somewhat from the extremely low 1965 level. Food shortages continue in India because of stock depletion and crop failures in several localities.

Per capita food production in the other less-developed countries of Asia in 1966 continued the general uptrend of the past decade. In the less-developed countries of Africa, drought, tribal conflict, and widespread political instability caused a decline in per capita production for the third year in a row. Per capita food production also fell in Latin America in 1966, following a period of improvement during 1961-65.

Principal gains in world agriculture in 1966 were among the food commodities. New world production records were set for cereals, edible oilseeds, and sugar.

The gain in the output of livestock food products almost matched the gain in world population. Among the nonfood commodities, there were large declines in world output of coffee and cotton.

Cereals: World cereal production increased more than 5 percent in 1966. Wheat output rose more than 10 percent, with record crops in the USSR, Canada, and Australia. Rice production declined in Mainland China, recovered somewhat in India and Pakistan, and reached a record level in Japan. Global output of coarse grains set a new record in 1966. Production increased in Western Europe, Eastern Europe, the USSR, and Latin America.

Edible Oilseeds: Despite a significant decline in production of cotton-seed, world production of edible oilseed (in terms of oil) increased more than 5 percent to a new high in 1966. Record crops of soybeans and sunflowerseed were harvested and the output of olive oil rose about 7 percent. The decline in world output of cottonseed was caused primarily by the diversion of cotton acreage in the United States. In 1966, world soybean and sunflowerseed crops were about 45 percent and 60 percent larger, respectively, than the average levels of 1955-59.

Other Food Crops: World production of sugar in 1966/67 is expected to surpass the record set in 1964/65. Contributing to the increase in production were larger 1966 crops in the USSR, the Republic of South Africa, and Western Europe and an expected recovery in the Cuban sugar crop to be harvested in the first half of 1967.

The citrus crop was one-fifth larger than in 1965 and almost two-thirds above the 1955-59 average.

Production of potatoes and beans failed to increase in 1966.

Livestock Food Products: Output of livestock food products in 1966 continued the long-term gradual uptrend. The production of pork remained at the 1965 level but the output of other meats increased with poultry meat again registering the fastest rate of gain. Milk production increased in Western Europe, Eastern Europe, the Soviet Union, Latin America, and Oceania. Milk production declined in North America.

19. WORLD FOOD DEMAND

The first world food budget, developed by USDA's Economic Research Service, was published in October 1961. The study provided a comprehensive summary of world food needs. A second study, *The World Food Budget 1970*, appeared in October 1964. Similar studies will be published every 5 years.

The World Food Budget measures the requirement for food in the future against the availability of food. In a sense, it is a world balance sheet of input and outgo of food commodities.

Two-thirds of the world's people live in countries with nutritionally inadequate national average diets. The diet-deficit countries include all of Asia except Japan and Israel, all but the southern tip of Africa, the northern part of South America, and almost all of Central America and the Caribbean.

According to the 1970 World Budget report: ". . . the diet of people in these areas averaged 900 calories per day below the level of the one-third of the world living in countries with adequate national average diets in 1959-61, and 300 calories below the average nutritional standard for the diet-deficit areas. The daily consumption of protein was less than two-thirds of the level in the diet-adequate countries; the fat consumption rate was less than one-third."

The diet-deficit countries have generally low levels of living. Per capita yearly income in the base period was only $97 compared to $1,074 in the diet-adequate countries. While some economic development is taking place, it is offset by increases in population. These countries are already densely populated—53 persons per 100 acres of agricultural land compared to 17 persons per 100 acres in diet-adequate countries—and their populations are increasing at a rate of 2.1 percent annually, compared to 1.3 percent in the adequate areas.

World population passed the 1 billion mark shortly after the turn of the 19th century. As the 20th century approached it was estimated at 1.6 billion. In the first 66 years of the 20th century, world population more than doubled; it was estimated at 3.3 to 3.4 billion in 1966. If current trends continue, world population will exceed 4 billion in 1976 or 1977.

Most of the population growth is occurring in the food-short developing countries of Asia, Africa, and Latin America. It is estimated that by 1970, 2.5 billion people will live in the less-developed countries. About 800 million, nearly one-third, will be in Communist Asia. Nearly 560 million, over one-fifth, will be in India.

World food production since the late 1930's has increased at an average compound rate of about 2 percent a year—somewhat faster than world population. Even in the less-developed countries, where most of the population expansion took place, per capita food production increased during this period.

The net gain, however, was only about one-third of 1 percent per year—or about 8 percent for the entire period. Because of increased per capita demand (more people), food consumption in the less-developed countries increased faster than population.

20. THE FOOD FOR FREEDOM PROGRAM

The Food for Freedom program is a U.S. program that encompasses not only food shipments to needy countries but also takes in technical agricultural assistance provided to them. It is aimed broadly at helping less-developed countries meet immediate food shortage problems while helping them to become self-sustaining in the future.

Food aid phases of the program are carried on primarily under authority of Public Law 480. The value of these shipments in the 1960's has been on the order of $1.6–$1.7 billion annually—about one-fourth of total U.S. agricultural exports. Wheat, rice, and vegetable oils are the main aid commodities; other items include feed grains, tobacco, and cotton.

Food for Freedom strongly emphasizes the principle of "self-help," that is, the doctrine that food aid from the United States must be accompanied by a major effort on the part of recipient countries to provide more of their own food from resources and through their own efforts.

Where countries show willingness to give high priority to agricultural improvement, the United States reinforces such self-help efforts with technical support from the U.S. Department of Agriculture, the Agency for International Development, land-grant universities, and private agricultural resources.

The program provides for assistance to countries that decide to undertake family planning programs. Public Law 480, as amended, provides that foreign currencies generated through sales of U.S. food to needy countries may be used for financing, at the request of such countries, "programs emphasizing maternal welfare, child health and nutrition, and activities, where participation is voluntary, related to the problems of population growth . . ."

Unlike previous programs, food aid shipments will come from commodities "made available," not just from those that happen to be in surplus. Elimination of the "surplus" concept in food aid is predicated on the belief that the same programs that helped to eliminate commodity surpluses are flexible enough to gear farm production to quantities that can be used constructively.

One long-range goal of Food for Freedom is expansion of commercial markets for American agricultural commodities. Food aid in many instances has hastened economic reconstruction and development. Economic growth, in turn, has meant expanded foreign outlets for U.S. food and fiber.

U.S. food aid will continue to contribute to diet improvements as well as economic development of the less-developed nations. But, as the World Food Budget for 1970 notes, "considering the size of the nutritional gap, the limitations of expanding food aid, and the chronic balance-of-payments problems in most less-developed countries, the food gap will eventually have to be filled largely within each country itself. . . .

"This is a formidable task. . . . There is a vast reservoir of knowledge in the developed countries which, if properly adapted to the specific conditions of the deficit countries, could go a long way toward increasing the output of food. The problem is the gap separating the existing body of technology from its application. Improved technology has been applied to only a small part of the world, but this does not mean that it cannot take place in other parts of the world. Nor should it require the same amount of time."

FINANCE

Section A. *Production Costs*

21. FARM EXPENSES

Out of every dollar of realized gross farm income in 1966, about two-thirds went for production expenses.

	1957-59 (billion)	1966 (Preliminary) (billion)
Feed purchases	$4.4	$6.5
Property taxes	1.3	2.1
Interest paid	1.1	2.5
Fertilizer	1.1	1.8
Hired labor	2.8	2.8
Depreciation on motor vehicles and equipment	2.9	3.8

The index of prices farmers pay for commodities, interest, taxes, and wage rates increased 14 percent from 1957-59 to 1966. This compares with a rise of 13 percent in the consumer price index and a 14-percent increase in retail prices of food.

In 1966, farmers spent more than $1 billion for tractors, the highest for any year on record. It compares with $482 million in 1960, and an average of $650 million in 1957-59. Spending for other machinery and equipment in 1965 exceeded $2 billion for the first time, compared with $1.5 billion in 1960 and an average of $1.4 billion in 1957-59.

Farmers purchase about 1 out of every 15 new trucks. In 1965 and recent years, they spent about $1.5 billion for petroleum fuel and oil for use in their farming operations. Farmers also spent $2.1 billion for automobiles in 1965, more than double that spent in 1960. The 1957-59 average was $1.2 billion. Farmers spent approximately $3.5 billion for food in 1965 and $850 million for household furnishings.

During the decade 1955 to 1965 total farm production expenses, excluding most expenses for farm operators' houses and rent to nonfarm landlords, increased 43 percent. Production expenses for major overhead—depreciation, taxes, and interest on farm mortgage debt—rose 55 percent; current operating expenses went up 39 percent. Hired labor got the lowest percent of increase, only 6 percent, while the cost for purchased livestock increased the most—89 percent.

The index of prices paid by farmers for production items, interest, taxes, and wage rates increased 19 percent. Farm mortgage interest (a measure of farm mortgage debt) increased 136 percent from 1955 to 1965.

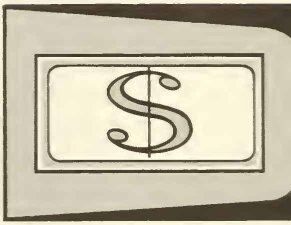
In terms of 1957-59 dollars, purchased feed increased from 17.3 cents to 21.7 cents out of each dollar of expenses; miscellaneous expenses rose from 10.5 to 13.1 cents, and interest on farm mortgage debt from 1.7 to 3.5 cents. Expenses for hired labor dropped from 13.9 cents in 1955 to 8.5 cents in 1965 and depreciation declined from 17.4 to 15.0 cents.

The total costs of all U.S. farming, as measured by total farm production expenses, reached $33.2 billion in 1966. Expenses in 1966 for commodities and services of nonfarm origin were almost 5 percent above 1965, while outlays for farm-produced items—feed, seed, and livestock—were 14 percent higher.

A part of the increase in farm costs in recent years is due to payments for services that the farmer used to do for himself. Farmers may now have feed delivered directly into their hog, poultry, or beef feeders. Some suppliers will construct buildings, install fences, test soils, and they will finance these services—for a charge—as well as the supplies they sell.

22. RECENT FARM COST HIGHLIGHTS

- Over the past 15 years increases in the prices of farm machinery have averaged about 3 percent per year, while the average annual increase in farm output per man-hour has been 10 percent.



- The inventory value of farm equipment (tractors and other machinery) was estimated at $20 billion in 1966. This machinery requires extensive maintenance, along with fuel, to operate. However, the prices paid by farmers for motor supplies (petroleum fuel, tires, batteries, etc.) have increased only 2 percent since 1957. The per unit cost of fertilizer has not changed greatly though aggregate costs continue to increase because so much more of it is used.
- One of the significant increases in farm outlays is the annual outlay for pesticides. From 1958 to 1963, pesticide expenditures increased at a rate of 8 percent per year. In 1964 and 1965, the rate doubled. Expenditures for herbicides were up 29 percent in 1965. A large share of the herbicides is being used where pesticides have previously not been used extensively, notably in the Corn Belt. The rate of increase in expenditures for pesticides is expected to continue at 15 to 16 percent for several more years.

Herbicide sales, increasing at a yearly rate of 25 to 35 percent, lead the way.

- During the calendar year 1966 farmers bought an estimated $6.5 billion of feed. This was nearly 27 percent of total farm operating expenses.
- Farmers paid $2.5 billion in interest in 1966 for money they borrowed to use in their farming business. This is 72 percent more than they paid in 1960. For several years prior to 1966, interest costs to farmers increased about 11 percent per year. The 14 percent increase in 1966 is a larger-than-usual upward move, caused by the sharp rise in the amount of money borrowed and increased rates of interest charged on new loans. Total farm debt at the end of 1966 was in the neighborhood of $45 billion.
- Farmers paid $2.3 billion in insurance premiums and social security taxes in 1966—up 8 percent from 1965. Farmers spend more for insurance on automobilies and trucks than for any other type of property insurance. Such coverage cost farmers $421 million in 1966.

Because of rising labor costs and limited supply of qualified workers, farmers will continue to substitute labor-saving methods, machines, and other capital inputs for labor. For some mechanized operations, use of rented machines or custom operators is a feasible alternative—particularly on farms too small to justify ownership of machines.

23. FARM POWER AND MACHINERY

Since 1950, wholesale prices for farm machines and equipment have increased at an average annual rate of about 3 percent, generally ranging from 1 to 4 percent. Trends in prices paid by farmers for machinery and motor vehicles have followed a similar pattern. Increases in farm machinery prices have been quite large in relation to prices received by farmers for farm products. However, some of the increase in machinery prices has been due to improvements which make the machines more efficient.

Farm output per man-hour has increased at a remarkable rate in recent years. Machines have played an important part in this progress. The degree of mechanization on commercial farms is constantly increasing although the total machinery input on all farms has increased only slightly since 1955. Power inputs equivalent to those directed by 3, 4, or more men only a few years ago are now often directed by 1 man.

The inventory of farm equipment (tractors and other machinery) is valued at nearly $20 billion. This equipment requires extensive maintenance, along with fuel, to operate. Annual surveys (by the National Farm and Power Equipment Dealers Association) indicate that dealers' margins on machinery parts have declined slightly since 1960. Prices paid by farmers for motor supplies (petroleum fuel, tires, batteries, etc.) have remained almost unchanged, increasing only about 2 percent since 1957.

Farmers spent an estimated $5.7 billion for machinery and motor vehicles in 1965, a record and nearly 10 percent more than in 1964. Automobiles accounted for expenditures of over $2.1 billion, slightly more than was spent on farm machinery and equipment. Next in importance was the $1 billion spent for tractors. Tractor expenditures were almost a fourth greater than in 1964. The $0.5 billion spent for motortrucks was only 3 percent higher.

24. FARM REAL ESTATE

The total value of farm real estate reached $171.1 billion as of March 1, 1966, up $11.7 billion or 7.3 percent, over March 1965. The average value of land and buildings per farm averaged $57,000, ranging from $24,100 in the Appalachian region to $153,000 in the Pacific States. In the Delta and Corn Belt States, increases of 12 to 15 percent were reported for the single year, raising the national index average value per acre to 150 (1957-59=100), 8 percent above a year earlier.

Farm Real Estate Values

Date	Total value	Value per farm	Value per acre
	Billion dollars	*Thousand dollars*	*Dollars*
March 1966	171.1	57.1	157
Nov. 1965	165.4	54.3	152
March 1965	159.4	52.2	146
Nov. 1964	157.8	49.3	141
March 1964	150.8	48.0	137

The near doubling in the annual rate of increase in the Corn Belt States is attributed to sharp increases in corn yields and rapidly developing technology that promises still higher yields. With a State average of 94 bushels per acre, Indiana led all States in 1965. Yields were up 31 percent from 1964—a fourth above the 1959-63 average. Better than average hog and cattle prices in 1965 and 1966 also contributed to the general optimism.

Many factors contribute to regional rises in farm real estate values. Land prices in the Southeast and Delta States have been influenced by the improved highways, expansion of industry into formerly rural areas, public work programs, and the conversion of substantial acreage of farmlands to timber production.

The wide range of forces that have been operating are more apparent in long-term comparisons. If the 1957-59 average price is used as a base, Arkansas has had the greatest increase in farm real estate values of any State—91 percent. Florida is in second place with 86 percent, and Georgia, 85 percent. Most of the other States with increases of 50 percent or more are in the Southeast.

Although land values have recently increased sharply in the Midwest, they trail substantially behind the national average. Wisconsin has shown the smallest increase of any State—25 percent.

Average value of farmland and buildings per acre, total value, and average value per farm, by regions, March 1, 1965-1966

Region	Value of land and buildings					
	Per acre		Total		Per farm	
	1965	1966	1965	1966	1965	1966
	Dollars	*Dollars*	*Million dollars*	*Million dollars*	*Dollars*	*Dollars*
Northeast	231	245	8,375	8,691	38,700	41,800
Lake States	176	186	11,314	11,893	33,400	36,000
Corn Belt	273	306	35,896	40,050	54,400	62,400
Northern Plains	92	99	16,834	18,234	62,900	69,600
Appalachian	187	198	12,051	12,679	22,300	24,100
Southeast	192	203	10,300	10,803	40,300	43,100
Delta States	171	196	7,179	8,121	31,900	37,800
Southern Plains	116	122	20,835	21,779	81,000	87,100
Mountain States	51	54	13,490	14,301	104,000	112,200
Pacific States	303	321	23,168	24,540	139,300	153,800
48 States	146	157	159,441	171,091	52,200	57,100

As more land is taken for suburbs, roads, and industrial uses, the importance of nonagricultural factors in boosting land value increases. Nonagricultural competition for land in some areas has caused the price per acre to rise as much as 50 percent above its value in agricultural use.

Two-thirds of all farmland buyers during fiscal 1966 were active farmers, however. The distribution of sellers of farmland has changed very little during the past 6 years, with active farmers selling about half of the properties that come on the market and nonfarmers selling about a fourth. The remaining fourth of the sales are the result of settlement of estates and sales by farmers who have retired.

The total investment in farm service buildings is about $15 billion—nearly equal to the value placed on farm livestock and two-thirds of the value of all farm machinery. Although the expenditures per farm for building repairs and capital improvements have been increasing steadily over the past 2 decades, the total of such expenditures has been declining since 1952. In today's specialized agriculture, certain types of buildings (such as hog houses, chicken houses, and horse barns found on almost every farm a decade ago) are not needed, so they are allowed to depreciate or are removed. With the shift to fewer and more specialized buildings the type of construction has changed. Low cost pole and sheet metal construction tend to replace more costly frame buildings.

25. AGRICULTURAL CREDIT

Sellers themselves continue to be the major source of credit for farmland purchases. They financed 38 percent of all credit sales in 1965; of these, 77 percent were by land contract.

Three-fourths of the sales in each of the past 3 years have involved credit. As a percentage of the sale price, debt incurred has moved upward, reaching 72 percent in March 1965.

Farmers borrow money for many reasons other than the purchase of land. More than one-half of the bank farm-real-estate-secured credit outstanding is associated with other than land purchases. Agricultural loans may be defined as:

Real estate secured loans—all loans secured by "farmland (including improvements)."

Nonreal estate farm loans—all agricultural loans not secured by farm real estate. These loans are for such purposes as production expenses, capital investments, living costs, and refinancing.

Intermediate-term farm loans—nonreal estate farm loans which have a repayment period exceeding 1 year and those real estate secured loans associated with intermediate-term farm financial programs.

Life insurance companies are the largest institutional lenders in the farm mortgage field. On January 1, 1966, their outstandings approximated $4.8 billion—12 percent above a year previous.[3] Many banks have contracted with life insurance companies for sharing the farm mortgage business which the banks originate. In some cases the bank simply acts as an agent for the insurance company; in other cases the company agrees to buy farm mortgages from the bank within a given period. Approximately one-third of the volume of loans outstanding held by life insurance companies was in one way or another serviced by a bank or banker.

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[3] The amount of outstanding loans reported by principal lenders as of January 1, 1966, was as follows: Federal land banks, $4,240,227,000; Farmers Home Administration, $631,147,000; life insurance companies, $4,815,410,000; all operating banks, $2,939,046; other farm mortgage debt, $8,587,880,000 (this amount may be taken as a rough measure of the farm mortgage debt held by individuals and other nonreporting lenders). The total farm mortgage debt was $21.2 billion—Agricultural Finance Review, Vol. 27, October 1966, p. 81.

Another source of farm credit commonly used is the country bank, but an increasing amount of bank credit to farmers is handled by city correspondent banks participating in loan arrangements originating at the country bank.

Other lending activities are under the supervision of the Farm Credit Administration, an independent permanent supervisory agency headed by a 13-member Farm Credit Board. The Farm Credit Administration supervises and coordinates the activities of Federal Land Banks, Federal Intermediate Credit Banks, the Banks for Cooperatives, the Federal Land Bank Association, and the Production Credit Associations.

26. CREDIT THROUGH FEDERAL AGENCIES

The Farmers Home Administration, an agency of the United States Department of Agriculture, provides a supplementary source of credit for farmers and others in rural areas who are unable to obtain financing through conventional lenders. The FHA was created to make loans of higher risk than are considered justifiable by other lending agencies. When an FHA borrower becomes eligible for credit from an independent lender, he is expected to refinance his FHA loan.

Operating loans are extended primarily to help farmers make needed adjustments and adopt improved farming practices. Funds are advanced for the purchase of equipment, livestock, feed, seed, and fertilizer; for other farm and home operating needs; to refinance chattel debts; to carry out forestry purposes; and to develop income-producing recreational enterprises. The total indebtedness for operating loans is limited to $35,000 for one borrower. Loans are made at 5 percent interest and are to be repaid over a period not exceeding 7 years.

Emergency loans are available to assist farmers in designated emergency areas to continue farming. These loans may not be used to refinance existing debts or to compensate applicants for their losses. Emergency loans are made at 3 percent interest and are to be repaid as crop and livestock products are sold.

Farm ownership loans are made to help farmers enlarge, develop, or buy family-type farms; refinance debts; carry out forestry purposes; and develop income-producing enterprises. Loans are repayable over a period not exceeding 40 years at 5 percent interest. Total principal indebtedness to individual borrowers may not exceed $60,000.

Rural housing loans are made to farmowners and owners of nonfarm tracts, including elderly people, living in rural areas or in communities of not more than 2,500 inhabitants. Loans are made for the construction and repair of needed homes and essential farm buildings. Repayment is scheduled over a period not exceeding 33 years; interest rate is 4 percent. Under the Economic Opportunity Act of 1964, the FHA makes loans to low-income farm and nonfarm rural families, including their co-operatives, in need of small amounts of capital to improve earnings.

Water development and conservation loans are made principally to carry out soil conservation measures and to develop irrigation and farmstead water supply systems. Loans for shifts in land use, including the development of recreational facilities, are made to nonprofit associations. Individuals can borrow up to $60,000. An association's indebtedness cannot exceed $500,000 when the loan is made from appropriated funds, or $1 million when made from insured funds. The interest rate varies between 4½ percent and 5 percent, depending upon the type of loan. Repayment is scheduled over a period not exceeding 40 years.

Watershed loans are made to local organizations to help finance projects that protect and develop land and water resources in small watersheds. These loans are repayable over a period of up to 50 years, and the interest rate for loans made in fiscal 1967 is 3.225 percent.

The Rural Electrification Administration was established in 1935 and given permanent status by the Rural Electrification Act of 1936. The REA is empowered to make loans to qualified borrowers, with preference to nonprofit and cooperative associations and to public bodies. As of January 1, 1966, such REA loans outstanding to cooperatives totaled more than $3 billion, representing 94 percent of all REA electrification loans.

The REA loan program is also helping to develop a rural telephone system.

Telephone loans outstanding as of January 1, 1966, totaled $888 million, of which 65 percent were to commercial telephone companies and 35 percent to locally operated cooperatives.

27. FARM CREDIT ADMINISTRATION

The Farm Credit Administration is an independent Government agency that supervises the Cooperative Farm Credit System which obtains it loan funds by selling securities to investors. The Farm Credit System is largely owned and controlled by its users. The System is made up of 12 Federal land banks and about 700 local Federal land bank associations, 464 local production credit associations, and 13 banks for cooperatives from which farmers' marketing, purchasing, and business service cooperatives obtain loans.

The Federal land bank associations have always been farmer owned. Federal land banks have been completely farmer owned since 1947. All but two of the 464 production credit associations are completely farmer owned. Four of the 13 banks for cooperatives are completely farmer owned and the others soon will be. The Federal intermediate credit banks have also made substantial progress toward complete farmer ownership.

The Farm Credit System provides about 20 percent of the credit used by farmers and their cooperatives. Borrowers from other lending institutions benefit from its operations because other lenders tend to follow the lead of the System in setting the terms of loans.

The Farm Credit Administration operates under a 13-man, part-time policy-making Federal Farm Credit Board. Twelve members of the board are appointed for 6-year staggered terms by the President of the United States. The 13th member is appointed by the Secretary of Agriculture and acts as his representative.

28. THE BALANCE SHEET

On January 1, 1966, the total farm debt outstanding was $40.2 billion—$15.4 billion, or 62 percent, higher than on January 1, 1961.

During 1965 farm real-estate-secured debt (excluding CCC loans) increased $4.2 billion or 12 percent. In the preceding 3 years the increase was 10 percent annually. The record dollar increase in total farm debt in 1965 occurred in both real-estate-secured farm debt and other farm debt, though the percentage increase in nonreal estate debt was slightly less.

However, the dollar increase in total farm debt was far less than the increase in the equities of operators and landlords in their businesses. That increase in 1965 was $13.8 billion.

The total value of farm assets was estimated at $255.8 billion at the beginning of 1966, up from $237.9 billion at the beginning of 1965. This increase—7.5 percent—was about double the rate of increase in the previous year. Total debts, including Commodity Credit Corporation loans, increased 10.7 percent. The equities of farmers and other owners of farm property increased $13.8 billion, or 6.9 percent. This dollar increase in equities was the largest since 1951-52, during the Korean conflict.

As in other recent years, the major factor causing the rise in the value of total assets was the increase in farm real estate values. Farmland and buildings have long represented the major agricultural asset, accounting for about two-thirds of total assets in recent years. Unlike other assets, however, most of the annual increases in total value result from higher per-acre values rather than from changes in physical quantities. In fact, the acreage of land in farms has been declining at the rate of about 4 million acres annually since 1959, compared with an annual rate of about 7 million acres between 1954 and 1959. The total decline between 1950 and 1966 amounts to about 68 million acres. In the absence of such a decline in the land-in-farms inventory, the total market value on March 1, 1966, would have been about $10 billion higher than the estimated value of $171 billion.

Partly offsetting this decline in the land inventory is the continuing investment being made in land improvements, especially in irrigation, land clearing, and pasture improvement. In addition, substantial amounts of public investments are made annually which become incorporated in the market values of farm real estate.

During 1966, rates of repayment on farm-mortgage loans remained favorable. The number of delinquent loans was so small as to be insignificant; foreclosures were practically nonexistent. Many mortgage borrowers continued to refinance earlier mortgage loans, often borrowing more than their initial debt. This appeared to be a sound method of financing the expansion of farm units, not an indication that borrowers were in trouble. Nonreal estate loans also continued in a generally strong position with few defaults in loan repayments.

It appears that farmers most heavily in debt are making the greatest gains in both equities and income. As is pointed out in a June 1966 appraisal, such gains depend upon the use farmers make of credit (and leasing of land) to expand their operations: " . . . the most significant point is the extent to which the indebted farmers use their equities as a fulcrum for developing larger operations than their own financial resources would support. The most heavily indebted farmers owned 3½ times as much land, and operated 6 times as much land, as they could have owned or operated without borrowing or leasing."[4]

Section B. *Prices and Income*

29. FARM PRICES

Swings in prices for farm products are more extreme than the variations of other prices. It is possible for farmers to benefit only when the prices they receive go up faster than industrial prices, a circumstance that rarely occurs. As a rule, when farm prices start downhill they decline much faster than the prices farmers must pay for items they need for production. Farmers may produce as much or more food and fiber and yet receive fewer dollars—and the dollars they do receive may buy less. Retail food prices may in fact increase at the same time farm food prices are going down.

The prices of farm products are unstable relative to the prices of automobiles, machinery, newspapers, and haircuts—to name only a few—partly because there is more price competition in agricultural markets. Farmers compete with one another in selling their products to middlemen, who in turn compete with one another in selling them to consumers. This contrasts with the situation in many manufacturing and service industries, where competition may have little direct effect upon price from day to day or from month to month, or even from year to year. Prices of products and services of nonfarm origin of course change but they are usually resistant to declines.

Food and fiber are among the basic wants of all people. When food is scarce, consumers will pay high prices to get as much as they can. But when food supplies are plentiful, prices of farm products may drop to low levels. In many instances, there is no way of storing or diverting the farm products from regular market channels.

Prices tend to fluctuate more at the farm level than at the retail level also because the amount of processing and marketing services included in processed foods is rising. The cost of such services does not fluctuate as widely as do prices of the raw farm products going into the processed foods. Wide swings in prices of farm products have a relatively small effect on prices of processed retail products. For many food products, the decline in farm prices must be almost catastrophic before the consumer will notice it at the retail level.

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[4] Garlock, Fred L., Farmers and Their Debts—The Role of Credit in the Farm Economy. U.S. Dept. Agr., Econ. Rpt. 93, p. 8. June 1966.

It is easier to expand agricultural production than to reduce it. Most farmers cannot change quickly either their occupations or their heavy investments in land and machinery.

The consistently high level of agricultural output in the United States is directly related to the use of improved farming technology, such as machinery, fertilizers, pesticides, and hybrid seeds. Although new technology lowers unit costs of production, it also increases output. The new technology is most profitable to those farmers who adopt it first. In the long run, the new methods expand production and reduce prices. Farmers who are either unable or unwillling to adopt the new methods are in a less profitable position than before and may find themselves unable to remain in farming.

30. PRICE INDEXES

An index is an indicator, as the index finger is the indicator finger. A *price index* is an indicator of the average level of prices in relation to prices at some other period. A price index provides a comparison of average prices for a group of items—at a particular time—with average prices for these items during an earlier period, called the "base period."

The *Index-of-Prices-Received-by-Farmers* is based on 52 commodities accounting for about 92 percent of all that farmers sell. The base period commonly used is 1910-14, but index numbers also are computed on a *1957-59-equals-100* basis. The 1910-14 base period is specified by law. The 1957-59 base is used for ready comparison with other price and production indexes. Indexes are published not only for all farm products combined, but also for 2 major groups and 15 subgroups, each representing a particular type of commodity—food grains, feed grains, etc.

31. PARITY PRICES AND PARITY RATIO

The parity ratio is a measure of the per unit purchasing power of farm products in terms of goods and services farmers buy in relation to the 1910-14 base period.

When the parity ratio is 100, prices received by farmers are in the same relationship to prices paid by farmers as they were in 1910-14. This means that a given quantity of a standard list of farm products could be exchanged for the same amount of a standard list of goods and services farmers buy. If the index of prices received is higher relative to the base period than prices paid by farmers, the parity ratio is *above* 100. Farm products then can be exchanged for a larger amount of goods and services farmers buy than they could in the base period. When the parity ratio falls below 100, farm products have less purchasing power than in the base period. They can be exchanged for a smaller amount of goods and services.

Arithmetically the *parity* ratio is obtained by dividing the index of prices received by farmers by the index of prices paid by farmers, including interest, taxes, and farm wage rates.

A parity-type measure is used on the golf course. When par ("base period" in parity) for a course is 72, then 72 is a good score. When the player scores below par, he is doing fine; if his score rises above par, he is not doing so well. In farming, par is 100, but the ratio is reversed. When the parity ratio is *below* 100, the farmers' goods buy less. The farther below 100 the parity ratio drops the less his goods will buy.

Parity prices are a guide for marketing agreements and are an important factor in determining price support levels.

Beginning with the 1910-14 base period average of 100, the parity ratio (buying power of farm products) rose to 120 in 1917—during World War I. In June 1932 during the depth of the depression, it reached a low point of 53. However, by March 1943—during World War II—the parity ratio rose to 117. It dropped slightly for 2 years, then began climbing to a new yearly high, 115, in 1947. Since then the parity ratio trended downward through 1965, when it was 77. In 1966, prices received increased relative to prices paid, and the parity ratio averaged 80.

In the last 5 years, the parity ratio has ranged from 76 in 1964 to 80 in 1962 and 1966. The adjusted parity ratio, which includes Government payments, has ranged from an average of 80 in 1964 to 86 in 1966.

The parity price formula omits a consideration of the quantities of goods farmers sell and the kinds and quantities of the things they buy. For this reason, the relationship between the parity ratio and net farm income is not as close as had been true earlier. For example, the adjusted parity ratio averaged 82 in both 1959 and 1965. Realized net farm income was $11.3 billion in 1959, $13.8 billion in 1965. The difference of 23 percent in realized net income is important to farmers, and it emphasizes that the parity ratio has limitations as a measure of their economic position.

32. FARM INCOME★

Realized gross farm income in 1966 was a record $49.7 billion, some 11 percent above the previous year. Realized net farm income ($16.4 billion) was $2.6 billion higher than in 1965, the highest on record except for 1947.

The higher gross income for 1966 reflects an increase of some 11 percent in cash receipts from farm marketings and a rise in Government payments of a third. The volume of farm products marketed in 1966 was up 3 percent from 1965.

Farmers received an average of 7 percent higher prices for their products in 1966 than in 1965. Livestock and livestock product prices averaged 12 percent higher while crop prices were about the same. Receipts from marketings of milk were up 10 percent. Tobacco was up about 2 percent.

For all of 1966, direct Government payments to farmers were around $3.3 billion, compared with $2.5 billion in 1965. Cotton and wheat programs accounted for most of the increase, although feed grain payments continued to be the largest of any program.

In addition to farm income, some farm people receive income from various nonfarm sources. While nonfarm income is especially important to small operators who would find it impossible to make a satisfactory living from agriculture alone, nonfarm income is also significant for some farmers with high gross yearly sales (in excess of $10,000). The total income from nonfarm sources for all persons living on farms in 1966 was an estimated $6.9 billion.

Total realized net income figures are indications of agricultural prosperity when compared with similar totals, identically derived, for preceding years. The average realized net income per farm in 1966, computed on the basis of some 3.3 million farms, was $5,049. This was a record high—more than $2,000 or 71 percent higher than in 1960. In constant dollars (1957-59 = 100) the increase was 58 percent over 1960. This increase in actual average income per farm is attributed to a 41-percent gain in total realized net farm income and an 18-percent decline in farm numbers.

The average realized net is reached only by a minority of the farms. For example, in 1966 realized net income per farm from farming was $5,049. However, more than two-thirds of the farms did not reach the overall average net income figure in actual income. The average realized net income per farm of

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★ *Farm Income Situation,* FIS–207, July 28, 1967.

farms with $10,000 to $19,999 gross yearly sales in 1966 was only $6,869. Only these farms and those with higher gross yearly sales, 32 percent of the total number of farms, had a realized net in excess of $5,049.

Income is by no means evenly distributed among farm operators as it is, to a large degree, among skilled factory workers. Incomes of farmers differ and vary greatly from one region of the country to another and within the same region, and from one year to another. Capital investments are similarly varied.

In terms of cash receipts from farm marketings, California with $3.9 billion led all other States in 1966. Iowa, with about $3.5 billion, was in second place. The other eight States in the top 10 order of cash receipts from farm marketings in 1966 were Texas, Illinois, Minnesota, Nebraska, Kansas, Indiana, Wisconsin, and Missouri. North Carolina, Florida, Georgia, New York and Ohio were not far behind, but the remaining States are out of the billion dollar class for cash receipts, most of them far out. Rhode Island had $22 million in cash receipts; Alaska, at the bottom, reported only $4 million.

33. FARM INCOME VARIATIONS

U.S. farms vary in type, productivity, production costs, and income. Different types of farms are subject to different kinds of economic forces, to different variables in supply and demand, and to different types of weather. The United States spans the range of climates in the Temperate Zone. Until it is possible to control the climate, farm productivity will be affected by it—and affected differently in different regions.

Weather is by no means the only unpredictable variable. Neither farm costs nor farm returns can be predicted for individual farms with accuracy for a single growing season. While one or serveral crops may yield less than anticipated in any given year, others will yield more. When some types of farmers in some regions experience a decline in income, other types in other regions, or even in the same region, may enjoy an increase. Economically, a farming operation in California has relatively little in common with one in the Midwest. Cotton production is a different business from the raising of livestock, dairying, or poultry production.

Allowing for a capital charge of 4.1 percent (long-term average paid on debts to Federal Land Banks), farmers on different types of farms have fared as follows:

Type of farm	Hourly earnings	
	1957-59	1965
Dairy farms:		
New York	$ .80	$ .60
Eastern Wisconsin (Grade A)	.81	.75
Broiler farms:		
Delmarva	.78	1.12
Corn Belt farms:		
Hog fattening-beef raising	.63	1.62
Hog-dairy	1.35	2.26
Wheat farms:		
Southern Plains	2.31	1.80
Northern Plains	.99	3.09
Cattle ranches:		
Northern Plains	.67	1.15

34. IMPROVING FARM INCOME

Agriculture in the United States is decentralized. No single corporation or group of companies dominates farm production. Most farm products have little or no indentity. Unlike manufactured goods, one farmer's corn or wheat is about the same as another farmer's.

One result of this decentralization and unidentified farm products is that the decision of an individual farm operator cannot markedly affect total national production.

The steel industry may operate at 50 or 60 percent of capacity when demand for its product is low. Auto manufacturers try to match production to estimated sales. Laws require oil producers to restrict production to a specific quota.

But farmers generally cannot limit production to maintain prices. For the limits to have the desired effect, all the producers of a product must agree to adjust production. Individual commercial family farmers generally try to increase production regardless of prices. They do so because their unit costs of production will continue about the same or lower, and their total income will increase as their production increases.

When many commercial farmers are forced to maintain income by increasing production, the price structure weakens and they find themselves in a vicious cycle of increased production, lower prices, and depressed incomes. Lower farm prices do little to stimulate increased consumption of foods. Even if retail prices are reduced by lower farm prices, people eat just so much food. When prices go down, consumption may increase very little.

An example is staple foods such as bread and potatoes. People will generally not eat much more of these if the price drops a few cents. For bread it would take a catastrophic farm price drop to lower bread prices by a few cents. If the farmer gave his wheat away, the price of bread would drop only 2.5 cents for a pound loaf. When a man's income doubles, he may buy two cars, a bigger house, and more clothes, but he will not eat much more bread.

Because agriculture has been unable to adjust production as some other industries do, and because farm income fluctuates widely and is often low compared with nonfarm income, Federal programs have been developed to help farmers better their lot by improving their bargaining power. Included are price support programs, acreage allotments and marketing quotas, marketing orders and agreements, and cooperatives—all these are methods that have been developed to give the farmer a better bargaining position.

35. PRICE SUPPORT PROGRAMS

Agricultural price-support programs are financed by the Commodity Credit Corporation (CCC) and administered by USDA's Agricultural Stabilization Conservation Service.

Agricultural Stabilization and Conservation (ASC) State and county committees are key units in ASCS's field organization. The farmer-elected county committees are responsible for local administration of such national programs as acreage allotments and marketing quotas, the Agricultural Conservation Program (ACP), the Conservation Reserve, price-support loans and payments, acreage diversion programs and payments, Sugar Act and National Wool Act payments, storage, and other ASCS and CCC activities requiring direct dealings with farmers. When arranging to participate in any of these programs, the farmer's first point of contact is the county ASCS office, which is usually located at the county seat.

ASCS administers price-support programs for wheat, corn, cotton (upland and extra long staple), peanuts, rice, tobacco, butterfat, milk, wool, mohair, tung nuts, barley, oats, grain sorghum, rye, flaxseed, soybeans, dry edible beans, cottonseed, honey, and crude pine gum.

Support is achieved through loans, purchases, and payments for some commodities, all at announced levels. For most commodities, loans are made directly to producers on the unprocessed commodity through ASCS county offices. Smaller amounts of many are also purchased from producers. Butterfat and milk are supported through purchases of processed dairy products and cottonseed prices are supported through purchases of cottonseed oil. Price support on tobacco, peanuts, and naval stores is carried out through loans to producer cooperative associations, which in turn make price support available to producers. Payments are used to support wool producers; part of the support price for wheat, feed grains, and cotton is provided.

Loans are available for periods of 6 to 8 months following harvest. Depending on the commodity, loans generally mature 1 to 3 months following the end of loan availability. Purchases from producers are made at the time of loan maturity for the crop. In recent years, farmers also have been able to continue their price-support loans on certain grains in farm storage beyond the first year, earning storage payments during the loan extension ("reseal") period.

Price-support loans to producers are "nonrecourse." If market prices rise above support prices, producers can pay off their loans and market their commodity. If market prices fail to rise above support prices, producers can deliver the commodity to CCC, with appropriate adjustments for quality and quantity, and discharge their obligation in full.

Support loans and purchases give farmers a ready means of promoting more orderly marketing particularly in periods when bountiful harvest supplies threaten to push prices of farm commodities down to unfair levels. When supplies are excessive, ever-normal-granary stocks are built up in supporting farm commodity prices. These ever-normal-granary stocks are in turn released into the market as needed to stabilize supplies and prices.

Eligibility for price-support loans, purchases and payments and for wheat marketing certificates is conditioned on participation in allotment or commodity acreage diversion programs for that particular crop.

36. PRODUCTION ADJUSTMENT

Acreage allotments and commodity acreage diversions are used in an effort to keep the production of several commodities in line with demand. Acreage allotments apply to cotton, wheat, rice, peanuts, and most kinds of tobacco. Commodity acreage diversions are used for corn and grain sorghum and for cotton in addition to acreage allotments. For 1967, wheat acreage allotments were increased and no acreage diversions were required for participation.

When supplies of certain commodities are very large, marketing quotas are used in conjunction with acreage allotments if at least two-thirds of the producers voting in a referendum approve the quotas. When quotas are in effect, any excess production of the crop—that is, in general, the production from acreage in excess of the farm acreage allotment—is subject to penalties. Marketing quotas applied to 1966 crops of cotton (both upland and extra long staple), peanuts, rice and eight kinds of tobacco.

National acreage allotments are divided among farms on the basis of past history of production of the crop and on other factors. In total, more than 3 million farm acreage allotments are determined yearly. To participate in allotment programs, producers harvest within the acreage allotments set for the commodity for their farms.

Acreage withheld from production under commodity diversion and other programs in 1966 included about 34.7 million acres from feed grain base acreages, about 8.2 million acres under wheat allotments and about 4.6 million acres from cotton allotments. With 13.3 million acres under the Conservation Reserve and 2 million under the Cropland Adjustment Program, the total reached about 63 million acres.

To participate in commodity diversion programs (in effect in 1966 for feed grains, upland cotton, and winter wheat), producers sign up to reduce their acreage of the commodity by at least a minimum amount below farm base acreages or allotments. Payments are made under commodity diversion programs to help farmers maintain their income while reducing their acreages to keep production in line with needs. In fiscal year 1966, acreage diversion payments amounted to $996.1 million, mainly for feed grains. Substantial reductions in grain surpluses since 1961 have been achieved through feed grain and wheat acreage diversions. The acreage diversion program, which has been successful for grains, has been broadened to include cotton.

The Cropland Adjustment Program supplements the commodity acreage diversion programs by offering farmers an opportunity to take acreage out of production under longer term contracts than the annual commodity programs. The program not only supplements the commodity programs but also provides for more open space and other recreational opportunities for urban areas. Specific incentives are offered to farmers if they share their land facilities with town and city people. Under "Greenspan" provisions, the program offers local, State, and other governmental agencies assistance in acquiring cropland and establishing practices to meet their open-space needs.

The Cropland Conversion Program, operated on a pilot basis since 1963 in a limited number of counties, is designed to improve family farm income by helping farmers convert land now used for the production of row crops and small grains in surplus to some long-range income-producing uses such as forests, grass, water storage, wildlife habitat, or recreational facilities.

The Conservation Reserve, whose authority to accept additional land ended with the 1960 program year, continues to provide for the withholding of farmland from production under long-term contracts.

Farmers participating in the Agricultural Conservation Program (ACP) receive assistance averaging about one-half the cost of carrying out such conservation practices as establishing and improving vegetative cover of grasses, legumes, or trees for soil protection, installing erosion control structures, and practices for the conservation and more efficient use of water. Payments are increased for low-income farmers. The program includes soil- and water-conservation practices especially beneficial to wildlife, such as establishment of food plots or habitats, pond and shallow water areas. Special attention is being given to the beautification of farmland.

37. COMMODITY DISPOSAL

Commodities acquired under the price-support program are made available for movement into consumption channels both at home and abroad as needs require in carrying out the ever-normal-granary concept and to keep CCC inventories at manageable levels.

The ever-normal-granary principle has been a part of farm programs since their beginning in the 1930's. When production exceeds needs, farm income is protected from undue market-depressing effects of the surplus by adding price-supported commodities to ever-normal-granary stocks under storage loans or CCC ownership, thus stabilizing farm market prices.

The complementary purpose of the ever-normal-granary provides for using these built-up stocks to stabilize consumer prices by moving commodities into use in times when supplies are low relative to need, or when demand is strong because of unusual circumstances. The ever-normal-granary principle is that of balancing years of low yields for specific crops with those of high by buying or selling at appropriate times so that each year reserve stock on hand will be adequate and about the same.

Many outlets are employed in moving CCC commodities into use. Some are sold in the United States for dollars. Some are sold for export, either as commercial transactions, or under various Government programs. They are never sold for domestic use at less than legal minimum levels, or current market prices, whichever is higher, except under authorized programs to meet emergency needs such as for livestock feed in disaster areas. Substantial quantities of food commodities are transferred, on either a reimbursable or non-reimbursable basis, for eventual donation to school lunch programs, Veterans Administration and Armed Forces hospitals, needy Indians, and through welfare organizations to other needy persons in the United States and abroad.

Of the $13.4 billion worth of commodities moved into use during the 5-year period 1961-66, about $3.4 billion worth were donated or transferred and the remaining $10 billion worth moved into trade channels.

38. SECTION 32 PROGRAMS

Each year 30 percent of all customs receipts are made available to the Secretary of Agriculture to be used to stabilize producer prices and encourage domestic consumption, to feed the hungry and to encourage export of agricultural commodities.

These funds—commonly called Section 32 (Section 32, Public Law 320)—act as a safety valve for oversupply, principally of perishable nonbasic commodities. Section 32 programs, though they are little known, have been in use for 32 years. They provide a wide range of services and make it possible to find uses for many surplus farm commodities that might otherwise be wasted.

The most frequently used of the Section 32 programs is the one which encourages domestic consumption and stabilizes producer prices. Purchase programs conducted with Section 32 funds help to level prices to producers by removing some of the oversupply of a commodity from normal trade channels and increasing its use by low-income groups.

During fiscal 1966 over 450 million pounds of agricultural commodities valued at more than $117 million were purchased by USDA with Section 32 funds and distributed to school lunch programs, needy families, and public institutions. Commodities, ranging from cherries and shortening to canned chopped meat and turkeys, were purchased and distributed to 27.5 million persons.

Increasing the export of American farm products is also a function of Section 32 programs. Section 32 funds may be used to pay an exporter a differential so that he can pay domestic producers the going rate and still sell the product overseas at a profit. Section 32 funds are also used for marketing agreements and orders, and diversion of farm products programs.

MARKETING

39. SCOPE OF MARKETING

Farm product marketing is defined as "that segment of the economy which lies between the farm gate and the ultimate consumer and performs the functions of handling, transporting, processing, and distributing all food and fiber products."

The U.S. agricultural products marketing system is interconnected with every other segment of the national economy through circular flows of goods and services. It is a part of a larger "agri-business" complex which has no well-defined bounds. In the broadest sense, " . . . today's marketing system does much more than transmit products through the various steps between the producer and the ultimate consumer. It is an integral part of the entire productive process. The scope of marketing extends beyond the sequence from farms to consumers; it includes the processing and distribution of feeds, fuels, fertilizer, feeder cattle, and many other inputs to farmers. Agricultural production, the supplying of farm products, and the marketing of farm products are, therefore, not separate entities, but part and parcel of one continuous sequence of productive processes." [5]

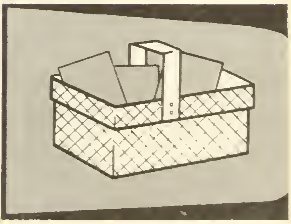
40. THE MARKETING BILL

Consumer expenditures on farm foods between 1956 and 1966 increased 50 percent, going from $55.5 billion a year to about $83 billion. Marketing agencies received 68 percent of the total increase, or $19 billion; the increase in returns to farmers amounted to $9 billion.

In 1966 it cost $55 billion to get food from farm to consumer. The figure—the bill for marketing farm food products—was 6 percent or $3 billion above 1965.

The 6 percent increase in the marketing bill for 1966 compared with an average annual increase of 4 percent during 1955 to 1965.

The cost of labor is the biggest part of the total marketing bill. Labor used by assemblers, manufacturers, wholesalers, re-



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[5] Quoted by O. P. Blaich and L. F. Herrmann in "Perspectives on Farm Product Marketing," *Agricultural Markets in Change*, U.S. Dept. Agr., Econ. Rpt. 95, July 1966.

tailers and eating places cost $23.2 billion in 1966, compared with $21.9 billion in 1965. The figures include the work of supervisors, managers, officers, proprietors and family members, production and clerical workers.

Labor costs have not increased as rapidly as other major components of the marketing bill. Labor costs amounted to 42 percent of the total marketing bill in 1966, 45 percent in 1956.

While labor costs per hour of work rose 52 percent between 1965 and 1966, the cost per unit of food marketed climbed only 17 percent—the result of a steady increase in output per man-hour.

Between 1956 and 1966 the number of workers in food processing firms decreased 7 percent; the drop was 5 percent for retail food stores. But the number of workers in eating places climbed by 13 percent and in wholesaling by 9 percent. The total number of food marketing workers in 1966 was only 1 percent greater than a decade earlier.

The addition of food services has increased the cost of food marketing by about one-fourth per unit of food since 1940. One reason for this average is that more people are eating out more often. Public eating places typically charge a margin of 60 to 65 percent above the wholesale prices of the food served. Margins for the same foods in a retail store average about 20 percent.

More convenience foods are sold now than 20 years ago. Convenience foods used to mean foods with "built-in maid service." In recent years they have added the quality of "built-in chef service" as well. Whole dinners can be purchased in a package. Boil-in-the-bag foods, prepared potato products, soluble coffee and instant puddings, frozen baked goods, brown-and-serve rolls, ready-to-bake bread—all of these are now common items for purchase. Some of them cost the consumer more; some do not. Nearly all are time-saving, and only the cook can judge the value of time saved in the kitchen.

Some convenience foods cost less in their processed forms. In a list of 115 convenience food items, 77 were found to cost more; they averaged 27 percent more than equivalent portions would have cost in fresh or unprocessed form. But 38 of the items processed and sold in a convenience form cost less than their cost would be without the processing. Frozen orange juice, canned or frozen peas, and frozen lima beans are examples. These had lower transportation costs because of the elimination of waste and bulk, and lower retail margins due to reduced perishability and reduced storage costs. For the 38 convenience foods that cost less, the consumer saved about 40 percent of the cost in fresh form requiring more do-it-yourself preparation in order to serve.

41. MARKETING MARGINS

Milk: A USDA study indicated that farm value of fluid milk in 1966 was 23.9 cents a half gallon, retail price in stores averaged 49.8 cents; that for every dollar spent for fluid milk in retail food stores, the farmer received 48 cents and 52 cents went for marketing. The marketing costs broke down this way: labor, 39 percent; buildings and equipment, 12 percent; containers and supplies, 12 percent; advertising and promotion, 6 percent; transportation, 9 percent; administrative and other, 12 percent; profits before income tax, 10 percent.

During the 10 years from 1956 to 1966, the retail price increased 12 percent; farm value increased 11 percent, and the marketing margin increased 14 percent. The marketing margin is the charge made by marketing firms for assembling, processing, transporting, and distributing the milk.

Meat: The difference between what the farmer gets for meat animals on the hoof and what the consumer pays for the meat fluctuates. In 1966, the farmer's share of the consumer's dollar spent for U.S. Choice beef was 59 cents; for pork, 56 cents; and for lamb, 54 cents.

Marketing margins for pork increased by about 24 percent from 1956 to 1966; margins for beef widened by 30 percent; and margins for lamb, 53 percent.

In 1966, margins per pound took 35 cents for beef, 39.4 cents for lamb, and 32.5 cents for pork.

Florida oranges: The orange picked off a tree in Florida is very different from the orange the housewife pays for at the supermarket checkout counter. After being picked, the orange is hauled from the grove to the packing house. It may be degreened, washed, brushed, waxed, inspected, sorted, packed, loaded onto a railroad car or truck and shipped to market. At the terminal market, it is unloaded, sold, hauled to the wholesaler's warehouse, unloaded, sold to a retailer, loaded and hauled to his store. At the retail store, it is unloaded, moved into the store, put onto the display rack, separated from damaged and spoiled fruit, and finally sold to the consumer.

The marketing change for a 90-pound box of Florida oranges sold in New York in 1964-65 averaged $8.94. The Florida grower received an average of $2.83 per box for these oranges on the tree, 24 percent of the $11.77 retail price.

Cotton: A bedsheet cost $2.16 in 1956 and the farmer got 76 cents for the cotton, or 35 percent of the retail price. In 1966, the bedsheet cost $2.23 and the farmer got 57 cents for the cotton (not including direct Government payment), or 26 percent of the retail price.

In 1956, a man's business shirt retailed for an average price of $3.86. The farmer received 29 cents for the cotton, or 8 percent. In 1966, the shirt cost $4.37 and the farmer's return for the cotton was 23 cents, or 5 percent.

A man's work shirt cost $1.67 in 1956, the farmer got 27 cents for the cotton, or 16 percent of the retail price. In 1966, the work shirt cost $1.86 and the farmer got 21 cents for the cotton, 11 percent.

The farmer's share of the consumer's dollar (farm value as a percentage of retail cost) varies among products, depending on the amount of processing, packaging, transporting, and other marketing costs.

White bread: White bread is an example of higher retail food prices and lower farm prices. In 1956, the average price of a pound loaf of white bread was 17.1 cents; the farm value of the wheat in the bread was 2.6 cents. In 1966, the retail price of bread had risen to 22.2 cents, but the farm value of wheat was only 3 cents, a rise of four-tenths of a cent (including value of marketing certificates but not additional payments to wheat farmers from U.S. Treasury).

The farmers' share of breakfast: In 1966, a half gallon of milk cost 49.8 cents in retail food stores; of this the farmer got 23.9 cents. From the 29.8 cents for a typical box of cornflakes, the farmer got 2.8 cents. Of the 22 cents for a 6-ounce can of frozen concentrated orange juice, the grower received 9.0 cents. For a dozen eggs retailing at 60 cents, the poultryman got 39 cents. And for a 22.2-cent loaf of bread, he got 3 cents for the wheat.

42. FOOD PRICES

Food prices have risen since 1957-59 along with other consumer items in the cost-of-living index. For all items other than food, the increase to 1966 was 13 percent. The price of transportation increased 13 percent; housing, 11 percent; personal care, 12 percent; medical care, 28 percent. For all food (including that served in restaurants), the increase was 14 percent.

Total food expenditures in 1966 were $91.3 billion, an increase of 7 percent from 1965. The average was $464 per capita, 6 percent above 1965. The increase was about matched by a comparable rise in disposable personal income ("take-home pay"), so that 18.1 percent of total disposable income was spent for food in 1966, nearly the same as in 1965. The percent of disposable personal income spent for food was 18.4 percent in 1964, 20 percent in 1960, 22.2 percent in 1950, and an average of 24.6 percent for 1947-49.

Consumers buy some foods which do not originate on U.S. farms. Foods originating on U.S. farms account for 16.4 percent of disposable personal income spent for food in 1966, a total of $83 billion. The farm value of this food was $28 billion—5.5 percent of disposable income. The other $55 billion—10.9 percent—represents the total bill for marketing (including processing, distribution, and food served away from home).

The average (median) family income in 1965 was $6,900, 5 percent above 1964 and more than double the average of $3,319 in 1950. After allowing for the increase in consumer prices, the income gain in 1965 amounted to 3 percent over 1964 and 58 percent over 1950. Only 3.3 percent of all families had incomes over $10,000 in 1950 compared with 24.9 percent in 1965.

The percentage of income going to pay the marketing bill has declined slightly (down 1.7 percentage points since 1950). The percentage of income going to farmers has declined even more (down 3.2 percentage points since 1950). In 1966 the percentage of income going to farmers was slightly greater than in 1965; the percentage of income going for the marketing bill was less.

One hour's work in a factory buys more food today than it did 20 or 30 years ago. Pay for one hour's factory labor would buy—

2.4 pounds of round steak in 1966; 2.5 pounds in 1945; 1.5 pounds in 1935, or

2.8 pounds of bacon in 1966; 2.5 pounds in 1945; 1.3 pounds in 1935, or

9.7 quarts of milk in 1966; 6.5 quarts in 1945; 4.6 quarts in 1935, or

3.4 dozen oranges in 1966; 2.1 dozen in 1945; 1.7 dozen in 1935.

43. THE MARKET BASKET

Changes in prices paid by consumers for farm foods are measured by a device known as the "market basket." This is a method of measuring the month-to-month prices of food purchased by households. Qualities and kinds of foods figured in the "market basket" are held constant for long periods of time, thus making it possible to measure changes in prices if the same kinds and qualities of food are bought.

In 1957-59, the farmer received $388 for food in the market basket, which was at that time 39 percent of the retail cost. In 1966 the farmer received $442, 40 percent of the retail value of the market basket, which was $1,100. The cost of marketing services in 1966 was $658, 11 percent above the 1957-59 average of $595.

While the retail cost of the market basket rose 12 percent from 1957-59 to 1966, the average expenditure per household for food increased 22 percent. The difference between the two must be due largely to increased buying of more expensive foods, additional marketing services, and the fact that more food was moving through the marketing system because farmers were buying at stores food for their tables which they had previously raised on their farms.

Farmers received an averaged of 39 cents of the dollar consumers spent for food in 1965, the same share as in 1957-59 but 11 cents smaller than in 1947-49. In 1966, farmers averaged 40 cents. The farmer's share depends both upon the prices he receives for his product and the costs of marketing it. The more marketing services, the greater the cost. The farmer's share of the consumer's dollar is smaller for a highly serviced product such as bread (17 cents) than for an unprocessed product such as egggs (65 cents). The wide variation of the farmer's share of the consumer's dollar among products is shown by the tabulation below:

	1966 Cents	1957-59 Cents
Beef, Choice grade	59	62
Butter	74	72
Eggs, Grade A large	65	64
Cornflakes	9	10
Bread, white	17	16
Apples	35	29
Potatoes	30	31
Canned corn	12	13
Canned peaches	16	18

44. MONEY VALUE OF FOOD

According to a survey conducted by National Analysts, Inc., under contract with the Department of Agriculture, the money value of food used by all housekeeping households in the United States averaged $35 per week in the spring of 1965. Of this amount, $29 was the value of food used at home and $6 was the expense for meals and snacks eaten away from home. A further breakdown of the figure for food used at home showed that $27 worth of food was bought and $2 worth of food was received without direct expense, mostly home-produced.

The average size of the households was 3.29 persons. Therefore, the per person averages for food for 1 week were as follows:

All food	$10.65
Money value of food used at home	8.79
Bought	8.19
Received without direct expense (home produced, federally donated, and received as a gift and as pay)	.60
Expense for meals and snacks eaten away from home	1.86

The USDA made a similar nationwide food consumption survey in the spring of 1955. At that time the average money value of all food of U.S. housekeeping families was $30 per week. The increase to $35 per week in 1965 was a 17-percent increase in dollar value of food over a period of 10 years.

45. CHANGES IN FOOD MARKETING

The continuing change in the processing and distribution of food is a response to the continuing change in the Nation's total economy and technology. When market conditions shift or transportation facilities improve, food marketing methods and costs also change. In a free economy, the principal controlling factor is competition.

The basis for competition itself changes. The principle underlying influences on food marketing can be stated simply: there are more people and they have more money.

The number of U.S. consumers has been rising by 2½ to 3 million persons annually in recent years. The population also shifts; many who formerly grew a large part of the food they ate moved from farm to town and now buy most of their food. In metropolitan areas, the suburbs have increased in population rapidly, while center city populations have increased more slowly or, as in many instances, markedly decreased. These changes affect the number and location of retail stores and processing plants, the amount and types of food sold, and food prices.

Rising incomes also have an important impact on the food industry. The purchasing power of income per person, after taxes, doubled between 1938 and 1965; it rose by nearly half in a period of only 15 years—from 1949 to 1965. Consumers in recent years have been able to eat expensive rather than cheap calories as they never have before. More consumers now buy steak instead of beans, demand high quality in all foods. They can afford to pay for packaging and variety in their foods, to shop in attractive stores, and occasionally to splurge and indulge themselves in the most expensive foods and food services.

The demand for food services is elastic—it expands, while the demand for raw food materials per person does not increase.

The pounds of food utilized per person has been declining slowly since World War II, but diets have shifted from inexpensive to more expensive foods, from bread to beef.

More women are working outside the home. The number has risen from 28 percent of the total labor force in 1947 to 35 percent in 1965. A working woman is likely to change her cooking habits; if she is the lady of a family, the family will change its eating habits. Chances are they will spend more and buy more food services.

Other factors affect marketing. When people do not expend much physical energy at work, they tend to eat less. The shift from manual labor to machinery and office work results in a significant decrease in food consumption. Better knowledge of nutrition has shifted demand away from some foods, notably those high in fat.

46. MARKETING ORDERS

Milk. Marketing orders are agreements among producers, usually started by them, but issued by the Secretary of Agriculture after investigation of market conditions and public hearings. Federal milk marketing orders establish minimum prices, based upon supply and demand conditions, at which milk handlers or dealers may buy milk from dairy farmers. The order must be approved by at least two-thirds of the dairymen supplying milk to a regional market. A three-fourths favorable vote is required under some circumstances. Public hearings are held on all proposed changes.

Operating at the first level of trade—where milk leaves the farm and enters the marketing system—Federal orders lay the foundation for building more stable marketing conditions between dairy farmers and dealers. They contain a built-in flexibility needed to cope with conditions that might endanger the milk supply. To those living in Federal milk marketing areas, this means a sure supply of fresh, high-quality milk.

Most of the Nation's major population centers are within a marketing order area. At the beginning of 1967 about 114 million people were getting their milk through dealers whose operations came under one of the 73 Federal milk marketing orders.

During 1966, 146,000 dairy farmers delivered 53.1 billion pounds of milk—12.3 billion half-gallons—valued at $2.7 billion under minimum prices specified in milk marketing order provisions. These farmers received an average price of 22 cents a half-gallon for the milk they supplied to areas regulated under Federal milk marketing orders.

Fruits, vegetables, and specialty crops. Growers of certain fruits, vegetables, and specialty crops (olives, hops, some nut crops are examples) use marketing agreement and order programs to bring greater stability and orderliness to marketing. There were 48 such programs at the beginning of 1967 covering $1½ billion in crops grown in 33 States.

As in the case of milk marketing orders, orders for fruit and vegetable growers are issued by the Secretary of Agriculture only after a public hearing where producers, marketers, and consumers may be heard, and after approval by the producers by vote. After an order has been issued, the growers and handlers administer it through a committee made up of industry members. Their work is financed by assessing the membership.

Most of the programs have *quality* regulations, which keep inferior grades and less desirable sizes of a commodity off the market. Many have *quantity* regulations, which prevent gluts and shortages on the market by keeping the commodity moving in orderly fashion throughout the marketing season. Some programs also have *marketing research* and *development* authority, permitting projects to find new market outlets, to improve marketing, and to advertise and promote consumption.

As an aid to marketing, such a program can be used or not, depending upon the current marketing climate. A few orders have been in active operation since the late 1930's; others were established as recently as 1966. During 1966, new programs were developed to regulate quality of California olives, Washington-Oregon Bartlett pears, and to limit to marketable quantities shipments of hops grown in Washington, Oregon, Idaho, and California.

47. FARMER COOPERATIVES

Farmer cooperatives deal in general with marketing farm products, selling supplies, and providing related services for their members. Among the service types of cooperatives are the credit cooperatives of the Farm Credit System, rural electric and telephone cooperatives, credit unions, insurance cooperatives, and cooperatives formed to finance irrigation systems.

A survey of the farmer cooperative business for the year July 1, 1964, to June 30, 1965, showed a total net business volume of $14.7 billion. In total net dollar volume of business California, Minnesota, and Iowa were first, second, and third among the States. The total gross business volume—the amount that adds business between cooperatives to the net figure—amounted to $19.6 billion for the year.

Some 8,582 farmer cooperatives are functioning in the United States, with a total membership of 7.1 million. (The figure contains duplications since many farmers are members of more than one cooperative.) Minnesota leads in number of memberships with 625,875.

The survey also showed that 5,305 cooperatives, or 62 percent, were engaged primarily in the marketing of farm products; 3,084, or 36 percent, did most of their business in farm supplies, and 193, or 2 percent, performed services related to marketing or purchasing activities.

The net value of all farm products marketed amounted to $11.5 billion. Dairy, grain, livestock led in product value in that order. The net value of farm production supplies amounted to $2.9 billion, and the leading farm supplies handled were feed, petroleum, and fertilizer. Receipts for trucking, storage, drying, ginning, grinding, and similar services were $316 million, 61 percent greater than 10 years before.

48. CONTRACT FARMING

When a farmer shares some of the management decisions and risks in operating his farm with one or more related businesses, he is said to be engaged in "coordinated farming." If there is a formal and periodically renewed contract between a farmer and food processor, the farmer is doing "contract farming." Coordinated farming can be carried out under informal business agreements between the farmer and another businessman. The coordinating firm may be a cooperative of which he is a member.

In areas where farmers get low wage returns and cannot switch to other crops, coordinated farming contracts have opened new markets. These contracts allow the contractor to share management of the farm with the farmer. With contracts, farmers need less money and carry less risk. The contractor shares the risk—in some instances, in effect, he guarantees the farmer an income.

Contracting arrangements have changed over the years. The trend is toward providing the farmer a guaranteed minimum return for his labor and investment.

Broiler production today is a form of close coordination between farmer and processor. Men employed by the contractor do much of the poultry farm management. Poultry raisers reduce their marketing risks and get a guaranteed labor return. Production is concentrated in operations that make fullest use of laborsaving equipment. In some instances, the broiler producer has been relegated to a pieceworker role.

The sugarbeet industry is a different example of contract farming. Nearly all sugarbeet growers in this country have contracts with processors. The contracts insure them a market.

Sugarbeets are heavy, bulky, and perishable. Their processing is complex and costly. They are grown under contracts that guarantee a market for growers and a source of beets for processors. Processors and grower bargaining associations negotiate contracts that tie the price of sugarbeets to the price of sugar. The contracts also specify acreage, delivery dates, payment schedules, growers' association dues, seed, growing methods, and marketing practices.

The Government, as required by the Sugar Act, analyzes contracts and determines that prices are fair and reasonable. Provisions of the Sugar Act also prevent excessive planting, specify wage standards, and ban child labor. Growers receive Government payments for compliance.

There are many other examples of contract farming. Various forms of these arrangements have existed for a long time in commercial fruit and tree nut production. Contract farming accounts for about two-thirds of the vegetables produced for canning and freezing.

So-called "vertical" coordination in farm production has many variations. These range from simple verbal agreements for processing or marketing to the complete ownership and operations of the farm by business. Contract farming lies between these limits. It is one way for a farmer to share some of his decisions and risks with his supplier, processor, or distributor—and still remain somewhat independent.

49. CONSUMER FOOD PROGRAMS

Consumer food programs, the National School Lunch, Special Milk, Child Nutrition, Food Stamp, Plentiful Foods, and Commodity Distribution make constructive use of our Nation's agricultural abundance, widen markets for agricultural commodities, and improve people's health and nutrition. Each program also makes its own contribution to expanding markets for food.

The U.S. Department of Agriculture's domestic food aid programs helped 26.4 million people in the United States in 1966. As fiscal 1966 ended, food donation programs to schools, needy families, and charitable institutions were functioning in all 50 States, Puerto Rico, the Virgin Islands, Guam, the Trust Territory of the Pacific Islands, and American Samoa.

Pilot School Breakfast Program—a 2-year test got underway in January 1967 with a $2 million appropriation enabling a few schools in nearly every State to begin breakfast service the first year. Federal help in cash and donated foods covers most of the food costs. Local communities meet other costs. Children can get breakfast at a nominal price of 10 to 15 cents. For especially needy children the breakfast is without charge.

The National School Lunch Program encourages schools to serve nutritious and moderately priced lunches. Participating schools agree to serve a lunch which meets one-third to one-half of the daily needs of growing children. It must include a protein-rich food, a generous serving of fruits and vegetables, bread and butter (or fortified margarine), and one-half pint of milk.

Normally, more than three-fourths of the food consumed is purchased locally by schools. The remainder is supplied by the Department of Agriculture. Schools also receive cash reimbursement for each lunch served that meets the Department's nutritional standards. Federal payments amounted to $141 million in fiscal year 1966. The funds provided lunches for children unable to pay.

The Special Milk Program helps schools and other nonprofit childcare institutions make more fluid milk available to more children. The program provides Federal payments for each half-pint of milk served to children at a reduced price. In 1966 this aid amounted to almost $97 million and stimulated the consumption of some 3 billion half pints of milk. The combination of the National School Lunch and Special Milk Programs now accounts for almost 5.5 percent of the annual nonfarm consumption of fluid milk. Under the special assistance phase of the program, free milk is provided to especially needy children.

The Food Stamp Program increases the consumption of food among low-income families. Under this program, the families exchange the amount of money they would normally be expected to spend for food for coupons of a higher monetary value. The coupons are used to purchase food at prevailing prices at any authorized retail food store. In January 1967 the program was operating in 589 areas in 41 States and the District of Columbia. More than 1.3 million persons were participating.

The Plentiful Foods Program assists producers and marketing groups to promote the sale and use of seasonally and other abundant foods. This assistance is accomplished by mobilizing, on a voluntary basis, the merchandising and informational resources of food trade, food service, and allied groups.

The Commodity Distribution Program is a system under which foods acquired under price support, surplus removal, and special purchase programs are distributed directly to schools, institutions, and needy persons through State governmental agencies. In 1966 over 21 million schoolchildren, 1.3 million needy persons in institutions, and a peak of 5 million needy persons in family units benefited. Under this program foods are donated to State Distributing Agencies (i.e., State governmental departments under agreement with the Department of Agriculture), which in turn distribute the food to eligible outlets and persons. In fiscal 1966 over 1.5 million pounds of food worth almost $270 milllion were distributed.

50. USDA GRADING AND STANDARDS

USDA food grading enables the housewife or the wholesale buyer to make buying decisions more easily and accurately. Grading indicates the quality of food. Some products are also graded for size—eggs, for example. However, size and quality are not related.

Buying graded foods does not necessarily mean buying only the best or most expensive. Grades offer a choice of quality so the buyer can pick the most suitable item for a particular purpose—for example, top grades of eggs for poaching or frying, lower grades for cooking and baking.

USDA either grades or supervises the grading of one-third of the butter, cheese, and nonfat dry milk produced in the United States; nearly two-thirds of the beef; more than half of the lamb and mutton; two-thirds of the poultry; one-fourth of the shell eggs; over three-fourths of the frozen fruits and vegetables; almost half of the canned fruits and vegetables; most of the grain that moves in commercial channels; nearly all of the cotton; and all of the tobacco sold at auction.

In 1966, USDA grades were applied to 63 percent of the poultry and 60 percent of the meat. Some 11.8 billion pounds of meat and 5.8 billion pounds of poultry were graded; 10.6 billion pounds of meat and 5.2 billion pounds of poultry were graded in 1965.

Both efficient marketing and the grading services depend upon standards. When standard grades are used, buyers in New York can order a carload of produce from California and know in advance the quality of the shipment. More than 300 standards are now in effect on farm products. Standards must be kept up to date with current marketing practices and with consumer needs. In 1966 new standards were issued for poultry roasts, swiss cheese, mixed nuts in the shell, okra and blueberries. Yield grades for slaughter cattle and grades for feeder pigs were developed, and standards were revised for 11 fruits and vegetables, and for wool and cotton.

51. REGULATORY ACTS

The Packers and Stockyards Act regulates those engaged in livestock and poultry marketing and meatpacking in interstate commerce. The Act prohibits unfair, deceptive, discriminatory, and monopolistic marketing practices.

The Consumer and Marketing Service's Packers and Stockyards Division received nearly 6,000 complaints in fiscal 1966, almost 3,700 of which were handled informally and resulted in payments to complainants of more than $1.5 million. The P&S Division handled a total of 194 reparation cases, and orders were issued by the Secretary of Agriculture awarding reparations of $182,258.

During the year, the P&S Division "spot checked" livestock auction markets in 7 States; "check weighed" livestock and meat on 253 scales; increased bonding protection to livestock producers and other marketing interests to $175 million; and saved producers and shippers an estimated $360,000 in marketing service charges by rejecting rate increases which could not be justified. In May 1967, a new agency, the Packers and Stockyards Administration, was established to enforce the *Packers and Stockyards Act.*

The *Federal Seed Act* protects farmers, homeowners, and other seed users against falsely labeled or advertised seed sold in interstate commerce.

A code of fair trading practices, the *Perishable Agricultural Commodities Act* sets up machinery for preventing and settling business disputes between buyers and sellers of fresh and frozen fruits and vegetables. The law requires that interstate traders in produce be licensed and authorizes USDA to suspend or revoke a trader's license for violating the Act. During 1966, USDA assisted in settling nearly 1,000 disputes on an informal basis, resulting in reparation payments of about $2½ million to those owed for the produce they sold. In addition, some 300 formal orders were issued awarding reparations of more than $1 million.

52. FOREIGN TRADE—EXPORTS

The United States is the world's leading exporter of agricultural products. In fiscal year 1965-66, more than one-fifth of the world's agricultural exports were shipped from the United States.

The Nation exported nearly $6.7 billion of agricultural products in fiscal year 1965-66—up 10 percent from the previous fiscal year. Crops from one of every four harvested acres were exported. The output of 78 million acres of U.S. cropland moved abroad.

The export market accounted for about two-thirds of the U.S. production of dried edible peas; almost two-thirds of the wheat (including flour equivalent); over three-fifths of the hides and skins; over half of the milled rice; over 40 percent of the soybeans and hops; more than one-third of the tallow, grain sorghums, nonfat dry milk, and dried prunes; one-fourth of the tobacco and raisins; and about one-fifth of the dried whole milk, cotton, lemons and limes, and cottonseed. As a share of quantity sold, U.S. exports of grain sorghums were almost half, and corn was about one-third.

U.S. agricultural exports in 1965-66 required financing, inland transportation, storage, and ocean transportation for 69 million long tons of cargo—enough to fill over 1.6 million freight cars or 5,500 cargo ships. In moving these exports, an average of 15 ships departed each day.

Eight States—Illinois, Texas, California, Iowa, Kansas, Indiana, North Carolina, and Minnesota—accounted for 50 percent of the Nation's $6,681 million worth of agricultural exports in fiscal year 1965-66. Illinois, with an estimated export share of $666 million, was the Nation's leading export State. Texas and California tied for second, with $495 million of attributed exports. Illinois' main exports were feed grains, soybeans, soybean oil, wheat, and protein meal; Texas' main exports were feed grains, cotton, wheat, and rice; California's principal exports were fruits and preparations, vegetables and preparations, cotton, and rice.

Six North Central States—Illinois, Iowa, Kansas, Indiana, Nebraska, and Minnesota—along with Texas, contributed an estimated half of the $3.7 billion increase in farm product exports between 1953-54 and 1965-66.

In 1966, exports in three groups of U.S. farm products—wheat and flour, feed grains, oilseeds and products—had a value of more than $1 billion each. These three accounted for 60 percent of the total exports.

Of the $6.7 billion U.S. agricultural exports in 1965-66, $5.1 billion were commercial sales for dollars, and $1.6 billion moved under Public Law 480 (foreign currency sales, donations, barter, and long-term supply and dollar credit sales) and Agency for International Development (AID) programs. Exports under Government programs were 24 percent of total agricultural exports in 1965-66.

Fiscal year 1965-66 completed the 12th year of operation of P.L. 480. During this period exports under this authority totaled $15.5 billion, 27 percent of total exports of U.S. farm products. An additional $2.2 billion, 4 percent of total exports, moved under AID programs, bringing total exports under specified Government-financed programs for the 12-year period to $17.7 billion—31 percent of total agricultural exports.

Although U.S. agricultural exports go to over 150 countries around the world, 72 percent of the exports in 1965-66 went to 15 countries. The principal market area was Europe, which includes the European Economic Community ($1.6 billion), the European Free Trade Association ($729 million), and the European Soviet Bloc ($129 million). Europe was followed by Asia ($2.2 billion), including Japan ($914 million). Other marketing areas and value of exports to them are: Canada ($630 million), Latin America ($556 million), Africa ($358 million), and Oceania ($53 million). Exports to Canada included shipments of $148 million worth of grains and soybeans for storage in Canada and for transshipment to foreign ports, mainly those in the European Economic Community and the European Free Trade Association.

53. IMPORTS

The United States is the world's third largest agricultural importing country. It took about one-eighth of world agricultural imports in calendar year 1965. The United Kingdom continued to be the world's largest agricultural importer in 1965 with imports of $5.8 billion. West Germany replaced the United States as the second largest importer, taking $4.8 billion compared with U.S. imports of $4.1 billion. Japan is the fourth largest importer of farm products ($2.8 billion); France is fifth ($2.6 billion); Italy is sixth (2.2 billion); and the Netherlands is seventh ($1.3 billion).

U.S. agricultural imports increased 12 percent in value during fiscal year 1965-66. Imports for consumption were $4.5 billion. This increase in imports is the largest since 1950-51, when imports grew substantially from the impetus of the Korean conflict. Imports of supplementary (partially competitive) products totaled $2.5 billion, and the increase in these imports accounted for 74 percent of the total increase. Complementary (noncompetitive) items were nearly $2 billion—up 7 percent from 1964-65.

Imports of complementary products consisted mainly of coffee, crude and natural rubber, cocoa beans, carpet wool, bananas, tea, spices and cordage fiber. About half of the agricultural imports—including nearly all of the complementary imports—were free of duty in fiscal year 1965-66.

U.S. imports of agricultural commodities come from more than 150 countries, but over three-fifths of the agricultural imports come from 15 countries. In fiscal year 1965-66, 61 percent came from 15 of these countries. They accounted for 68 percent of supplementary imports and 53 percent of the complementary items. Most of the agricultural suppliers were newly developing countries with predominantly agricultural economies. Imports from Brazil—the major supplier—totaled $475 million in 1965-66; Mexico, with $305 million, replaced the Philippines as the second largest supplier.

Latin American countries supplied the bulk (57 percent) of U.S. complementary agricultural imports. Brazil was the major source ($387 million) and Colombia was second ($210 million). Central American Common Market countries together supplied $216 million.

U.S. domestic exports of agricultural products in fiscal 1966 exceeded agricultural imports by $2.2 billion.

54. BALANCE OF PAYMENTS

A statement of economic transactions involving the exchange of goods, services, gold, and capital claims between a country and foreign countries is called a "balance of payments."

People in the United States pay other countries for imported goods and for services. Other outlays are made to foreign countries for economic and military assistance, for investments, private remittances, pensions, and other transfers of funds. The United States receives funds from other countries, mainly in payment for exports and services, mutual defense, investment, and repayments on U.S. Government loans.

A balance of payments deficit occurs when total payments to foreign countries are greater than receipts from foreign countries. A deficit for the United States means the accumulation abroad of U.S. dollar reserves, part of which official monetary agencies of foreign countries convert to gold. Persistent balance of payments deficits in recent years—the cumulative deficit between 1960 and 1965, inclusive, was $15.2 billion—have brought about substantial decreases in U.S. gold reserves. Between January 1, 1960, and December 1, 1966, U.S. gold reserves dropped from $17.8 billion to $13.2 billion. The high point in gold reserves was $24.8 billion in August 1949.

Balance of payments deficits can be corrected by measures to increase receipts and reduce the volume of payments. Among other measures to improve the U.S. balance of payments, the United States is trying to increase exports of agricultural and industrial products, and has asked for voluntary restraints on foreign investment of U.S. funds.

Agricultural exports give the United States substantial balance of payments help. From 1960 through 1965, overseas cash sales of U.S. farm products brought $23.6 billion back to the United States. Features of P.L. 480 program (Food for Freedom) enabled the United States to avoid dollar outlays amounting to $1.4 billion over the 6-year period. The aggregate contribution of agricultural exports to the U.S. balance of payments since 1960 has been $25.0 billion.

"Balance of trade" is the difference in value between a country's merchandise imports and exports in a specified period. The balance of trade—the difference in value between imports and exports—is called "favorable" when exports exceed imports and "unfavorable" when the reverse occurs.

A country's balance of trade is only one factor in its balance of payments. The United States has had a favorable balance of trade almost every year since 1874. In 1965 the United States had a favorable trade balance of $4.8 billion, and yet had a balance of payments deficit of $1.3 billion.[6]

"Kennedy Round" is the popular name for the Sixth Round of General Agreement on Tariffs and Trade negotiations, which formally got underway in Geneva, Switzerland, in May 1964. Fifty countries participated in the Sixth Round of General Agreement on Tariffs and Trade. The negotiations, concluded in June 1967, brought about a measure of trade liberalization which may be favorable to the United States.

55. EUROPEAN ECONOMIC COMMUNITY

The *European Economic Community* represents the economic integration of France, West Germany, Italy, Belgium, the

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[6] For a more complete listing of international agricultural definitions see "Terms Used in International Agricultural Trade," FAS-M-152, Revised April 1967, available from Information Division, Foreign Agricultural Service, U.S. Department of Agriculture, Washington, D.C. 20250.

Netherlands, and Luxembourg. Established in 1958 by the European Economic Community Treaty—usually called the "Rome Treaty"—the EEC is a unified area with a population of over 180 million in which commerce will be carried on freely. There will be no tariffs among EEC countries, no restrictions on movement of goods, capital, services, and workers. The area will have common policies with respect to agriculture, transport, taxes, and foreign trade.

In mid-1966 industrial tariffs within the EEC had been reduced by 80 percent and were expected to be removed completely by July 1, 1968. Common agricultural policies had been hammered out for 90 percent of the Community's agricultural production and, with minor exceptions, the way cleared for free Community-wide movement of farm products by July 1, 1968.

The Rome Treaty states that the EEC's common agricultural policy should provide increased efficiency in production, a fair return for EEC farmers, stable markets, regular supplies, and reasonable prices to consumers in a single Community-wide market with a common price level.

The Treaty provides that other European countries may be taken in as full members or associates of the EEC. Greece became an associate member in 1962; Turkey in 1964. Negotiations leading to associate membership for Austria were well along in mid-1966.

Association has also been set up with 18 newly independent African nations: Burundi, Cameroon, Central African Republic, Chad, Congo (Brazzaville), Congo (Kinshasa), Dahomey, Ivory Coast, Gabon, Madagascar, Mali, Mauritania, Niger, Rwanda, Senegal, Semali Republic, Togo, and Upper Volta. (At the time the Rome Treaty was negotiated, all of these countries were colonies or territories of EEC member countries and automatically become associate members of the Community.)

Other associates are the remaining overseas territories of EEC members, such as French Somaliland, French Polynesia, and Surinam. Three countries—Iran, Israel, and Lebanon—have signed trade agreements with the EEC.

EEC's headquarters are in Brussels, Belgium.

Sources and Additional Information

Except as footnoted, the sources for all of the material in this book were specialized and periodical publications of the United States Department of Agriculture. By necessity, nearly all of this material is under continuous revision, with new reports appearing weekly, monthly, and quarterly. Unless statements in this publication are otherwise dated, they represent the latest available information in January 1967.

A *List of Available Publications of the United States Department of Agriculture,* List No. 11, is for sale by the Superintendent of Documents, U.S. Government Printing Office, Washington, D.C., 20402.

A list, *Periodic Reports of Agricultural Economics,* is published yearly by the Division of Information, Office of Management Services, U.S. Department of Agriculture, Washington, D.C. 20250. Many nonperiodic reports and speeches are listed in *Checklist of Reports,* issued monthly, which may be obtained at the same address.

SUMMARIES OF STATE AGRICULTURE [7]

ALABAMA had 101,000 farms in 1966, of which about 56 percent were commercial. Average farm size was 159 acres. The State had a total of 16.1 million farmland acres, about 49 percent of total land area. Average value of farm land and buildings was $23,100. Farm marketings in 1965 were $661 million; $402 million from livestock, $259 million from crops. Average gross income per farm was $7,760, net income per farm was $3,051. Total cash receipts from farming were $696 million. Leading farm commodities in *1965* were: Cotton, $151 million; broilers, $139 million; and cattle, $93 million.

ALASKA had 330 farms in 1966, of which about 56 percent were commercial. Average farm size was 2,727 acres. The State had a total of 900,000 farmland acres, or about 0.2 percent of total land area. Average gross income per farm was $14,706, net income per farm was $1,566. Farm marketings in 1965 were $4 million; 3 million from livestock, $1 million from crops. Leading farm commodities in 1965 were: Milk, $2 million; potatoes, $754,000; and eggs, $584,000.

ARIZONA had 6,400 farms in 1966, of which about 71 percent were commercial. Average farm size was 7,031 acres. The State had a total of 45 million farmland acres, or about 62 percent of total land area. Average value of farm land and buildings was $491,700. Farm marketings in 1965 were $506 million; $212 million from livestock, $294 million from crops. Average gross income per farm was $79,620, net income per farm was $21,423. Total cash receipts from farming were $514 million. Leading farm commodities in *1965* were: Cattle, $170 million; cotton, $127 million; and lettuce, $55 million.

ARKANSAS had 74,000 farms in 1966, of which about 58 percent were commercial. Average farm size was 226 acres. The State had a total of 16.7 million farmland acres, or about 50 percent of total land area. Average value of farm land and buildings was $44,200. Farm marketings in 1965 were $916 million; $367 million from livestock, $548 million from crops. Average gross income per farm was $12,839, net income per farm was $5,095. Total cash receipts from farming were $933 million.

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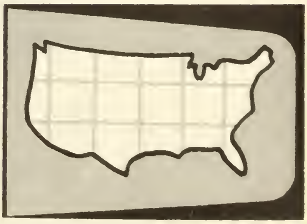
[7] Data on number of farms, average size, and total farmland acres for 1966 are from USDA and not comparable to 1964 Census data in all respects.



Leading farm commodities in *1965* were: Cotton, $253 million; soybeans, $162 million; broilers, $143 million; and rice, $90 million.

CALIFORNIA had 86,000 farms in 1966, of which about 71 percent were commercial. Average farm size was 448 acres. The State had a total of 38.5 million farmland acres, or about 38 percent of total land area. Average value of farm land and buildings was $251,000. Farm marketings in 1965 were $3.7 billion; $1.4 billion from livestock, $2.3 billion from crops. Average gross income per farm was $42,981, net income per farm was $9,474. Total cash receipts from farming were $3,751 million. Leading farm commodities in *1965* were: Cattle, $659 million; milk, $404 million; and cotton, $256 million; eggs, $201 million; and grapes, $163 million.

COLORADO had 32,500 farms in 1966, of which about 78 percent were commercial. Average farm size was 1,262 acres. The State had a total of 41 million farmland acres, or about 62 percent of total land area. Average value of farm land and buildings was $99,500. Farm marketings in 1965 were $728 million; $534 million from livestock, $194 million from crops. Average gross income per farm was $25,156, net income per farm was $3,752. Total cash receipts from farming were $789 million. Leading farm commodities in *1965* were: Cattle, $424 million; sheep and lambs, $34 million; wheat, $30 million; sugarbeets, $25 million; and milk, $37 million.

CONNECTICUT had 7,100 farms in 1966, of which about 68 percent were commercial. Average farm size was about 132 acres. The State had a million farmland acres, or about 58 percent of total land area. Average value of farm land and buildings was $69,400. Farm marketings in 1965 were $153 million; $91 million from livestock, $63 million from crops. Average gross income per farm was $22,710, net income per farm was $5,776. Total cash receipts from farming were $154 million. Leading farm commodities in *1965* were: Milk, $42 million; eggs, $31 million; and tobacco, $36 million.

DELAWARE had 4,700 farms in 1966, of which about 78 percent were commercial. Average farm size was about 157 acres. The State had a total of 740,000 farmland acres, or about 58 percent of total land area. Average value of farm land and buildings was $56,200. Farm marketings in 1965 were $128 million; $87 million from livestock, $41 million from crops. Average gross income per farm was $27,990, net income per farm was $7,966. Total cash receipts from farming were $130 million. Leading farm commodities in *1965* were: Broilers, $67 million; corn, $11 million; soybeans, $9 million; and milk, $9 million.

FLORIDA had 37,000 farms in 1966, of which about 57 percent were commercial. Average farm size was 419 acres. The State had a total of 15.5 million farmland acres, or about 45 percent of total land area. Average value of farm land and buildings was $149,700. Farm marketings in 1965 were $979 million; $238 million from livestock, $741 million from crops. Average gross income per farm was $26,607, net income per farm was $10,931. Total cash receipts from farming were $997 million. Leading farm commodities in *1965* were: Oranges, $247 million; milk, $86 million; cattle, $80 million; and tomatoes, $70 million.

GEORGIA had 86,000 farms in 1966, of which about 63 percent were commercial. Average farm size was 228 acres. The State had a total of 19.6 million farmland acres, or about 53 percent of total land area. Average value of farm land and buildings was $33,900. Farm marketings in 1965 were $946 million; $521 million from livestock, $425 million from crops. Average gross income per farm was $12,379, net income per farm was $4,610. Total cash receipts from farming were $995 million. Leading farm commodities in *1965* were: Broilers, $199 million; eggs, $123 million; cotton, $89 million; and peanuts, $101 million.

HAWAII had 6,400 farms in 1966, of which about 58 percent were commercial. Average farm size was 406 acres. The State had a total of 2.6 million farmland acres, or about 63 percent of total land area. Average gross income per farm was $31,544, net income per farm was $12,689. Farm marketings in 1965, excluding sugarcane and pineapples, were $185 million; $36 million from livestock, $149 million from crops. Leading farm commodities in *1965* were: Sugar products, pineapple products, milk, and beef cattle.

IDAHO had 35,300 farms in 1966, of which about 76 percent were commercial. Average farm size was 433 acres. The State had a total of 15.3 million farmland acres, or about 29 percent of total land area. Average value of farm land and buildings was $64,100. Farm marketings in 1965 were $526 million; $218 million from livestock, $308 million from crops. Average gross income per farm was $16,619, net income per farm was $5,291. Total cash receipts from farming were $555 million. Leading farm commodities in *1965* were: Potatoes, $122 million; cattle, $119 million; and wheat, $55 million.

ILLINOIS had 138,000 farms in 1966, of which about 84 percent were commercial. Average farm size was 218 acres. The State had a total of 30.1 million farmland acres, or about 84 percent of total land area. Average value of farm land and buildings was $94,400. Farm marketings in 1965 were $2.4 billion; $1.2 billion from livestock, $1.2 billion from crops. Average gross income per farm was $18,892, net income per farm was $6,203. Total cash receipts from farming were $2.5 billion. Leading farm commodities in *1965* were: Corn, $575 million; hogs, $548 million; cattle, $471 million; and soybeans, $402 million.

INDIANA had 116,000 farms in 1966, of which about 70 percent were commercial. Average farm size was 162 acres. The State had a total of 18.8 million farmland acres, or about 81 percent of total land area. Average value of farm land and buildings was $61,000. Farm marketings in 1965 were $1.3 billion; $743 million from livestock, $555 million from crops. Average gross income per farm was $12,675, net income per farm was $4,232. Total cash receipts from farming were $1.4 billion. Leading farm commodities in *1965* were: Hogs, $332 million; corn, $239 million; soybeans, $188 million; and cattle, $179 million.

IOWA had 161,000 farms in 1966, of which about 89 percent were commercial. Average farm size was about 214 acres. The State had a total of 34.4 million farmland acres, or about 96 percent of total land area. Average value of farm land and buildings was $69,600. Farm marketings in 1965 were $3.7 billion; $2.3 billion from livestock, $699 million from crops. Average gross income per farm was $20,102, net income per farm was $6,255. Total cash receipts from farming were $3.2 billion. Leading farm commodities in *1965* were: Cattle, $1,060 million; hogs, $917 million; corn $345 million; and soybeans, $296 million.

KANSAS had 97,000 farms in 1966, of which about 80 percent were commercial. Average farm size was 513 acres. The State had a total of 49.8 million farmland acres, or about 95 percent of total land area. Average value of farm land and buildings was $73,500. Farm marketings in 1965 were $1.2 billion; $723 million from livestock, $487 million from crops. Average gross income per farm was $15,037, net income per farm was $3,785. Total cash receipts from farming were $1.4 billion. Leading farm commodities in *1965* were: Cattle, $522 million; wheat, $299 million; sorghum grain, $74 million; and hogs, $99 million.

KENTUCKY had 140,000 farms in 1966, of which about 65 percent were commercial. Average farm size was 124 acres. The State had a total of 17.3 million farmland acres, or about 68 percent of total land area. Average value of farm land and buildings was $24,000. Farm marketings in 1965 were $703 million; $371 million from livestock, $332 million from crops. Average gross income per farm was $8,813, net income per farm was $3,569. Total cash receipts from farming were $507 million. Leading farm commodities in 1965 were: Cotton, $92 million; rice, $88 million; cattle, $89 million; and sugarcane, $52 million.

LOUISIANA had 62,000 farms in 1966, of which about 53 percent were commercial. Average farm size was 163 acres. The State had a total of 10.1 million farmland acres, or about 35 percent of total land area. Average value of farm land and buildings was $43,300. Farm marketings in 1965 were $485 million; $180 million from livestock, $305 million from crops. Average gross income per farm was $8,813, net income per farm was $3,569. Total cash receipts from farming were $507 million. Leading farm commodities in *1965* were: Cotton, $92 million; rice, $88 million; cattle, $89 million; and sugarcane, $52 million.

MAINE had 15,000 farms in 1966, of which about 61 percent were commercial. Average farm size was 201 acres. The State had a total of 3 million farmland acres, or about 15 percent of total land area. Average value of farm land and buildings was $20,300. Farm marketings in 1965 were $283 million; $134 million from livestock, $149 million from crops. Average gross income per farm was $19,043, net income per farm was $7,882. Total cash receipts from farming were $285 million. Leading farm commodities in *1965* were: Potatoes, $125 million; broilers, $47 million; and milk, $39 million.

MARYLAND had 22,200 farms in 1966, of which about 70 percent were commercial. Average farm size was 155 acres. The State had a total of 3.4 million farmland acres, or about 55 percent of total land area. Average value of farm land and buildings was $69,400. Farm marketings in 1965 were $328 million; $213 million from livestock, $115 million from crops. Average gross income per farm was $16,235, net income per farm was $4,517. Total cash receipts from farming were $334 million. Leading farm commodities in *1965* were: Broilers, $89 million; milk, $80 million; tobacco, $27 million; and corn, $25 million.

MASSACHUSETTS had 9,300 farms in 1966, of which about 70 percent were commercial. Average farm size was 115 acres. The State had a total of 1.1 million farmland acres, or about 21 percent of total land area. Average value of farm land and buildings was $47,800. Farm marketings in 1965 were $167 million; $93 million from livestock, $74 million from crops. Average gross income per farm was $18,511, net income per farm was $4,864. Total cash receipts from farming were $167 million. Leading farm commodities in *1965* were: Milk, $49 million; eggs, $22 million; apples, $8 million; and cranberries, $11 million.

MICHIGAN had 98,000 farms in 1966, of which about 64 percent were commercial. Average farm size was 141 acres. The State had a total of 13.8 million farmland acres, or about 38 percent of total land area. Average value of farm land and buildings was $35,000. Farm marketings in 1965 were $789 million; $425 million from livestock, $365 million from crops. Average gross income per farm was $9,457, net income per farm was $2,827. Total cash receipts from farming were $843 million. Leading farm commodities in *1965* were: Milk, $227 million; cattle, $98 million; corn, $48 million; and dry beans, $47 million.

MINNESOTA had 140,000 farms in 1966, of which about 84 percent were commercial. Average farm size was about 231 acres. The State had a total of 32.4 million farmland acres, or about 63 percent of total land area. Average value of farm land and buildings was $43,800. Farm marketings in 1965 were $1.6 billion; $1.1 billion from livestock, $464 million from crops. Average gross income per farm was $13,075, net income per farm was $3,982. Total cash receipts from farming were $1.7 billion. Leading farm commodities in *1965* were: Cattle, $395 million; milk, $336 million; hogs, $238 million; and soybeans, $145 million.

MISSISSIPPI had 104,000 farms in 1966, of which about 57 percent were commercial. Average farm size was 173 acres. The State had a total of 18 million farmland acres, or about 60 percent of total land area. Average value of farm land and buildings was $30,100. Farm marketings in 1965 were $812 million; $333 million from livestock, $479 million from crops. Average gross income per farm $8,533, net income per farm was $3,642. Total cash receipts from farming were $839 million. Leading farm commodities in *1965* were: Cotton, $351 million; cattle, $100 million; and broilers, $81 million.

MISSOURI had 157,000 farms in 1966, of which about 65 percent were commercial. Average farm size was 219 acres. The State had a total of 34.4 million farmland acres, or about 78 percent of total land area. Average value of farm land and buildings was $36,800. Farm marketings in 1965 were $1.2 billion; $823 million from livestock, $418 million from crops. Average gross income per farm was $9,411, net income per farm was $3,307. Total cash receipts from farming were $1.4 billion.

Leading farm commodities in *1965* were: Cattle, $353 million; hogs, $265 million; and soybeans, $180 million.

MONTANA had 29,500 farms in 1966, of which about 84 percent were commercial. Average farm size was 2,256 acres. The State had a total of 66.6 million farmland acres, or about 71 percent of total land area. Average value of farm land and buildings was $112,900. Farm marketings in 1965 were $412 million; $241 million from livestock, $179 million from crops. Average gross income per farm was $16,770, net income per farm was $5,089. Total cash receipts from farming were $472 million. Leading farm commodities in *1965* were: Cattle, $191 million; wheat, $110 million; and barley, $34 million.

NEBRASKA had 80,000 farms in 1966, of which about 89 percent were commercial. Average farm size was 601 acres. The State had a total of 48 million farmland acres, or about 98 percent of total land area. Average value of farm land and buildings was $73,600. Farm marketings in 1965 were $1.4 billion; $972 million from livestock, $384 million from crops. Average gross income per farm was $19,646, net income per farm was $5,363. Total cash receipts from farming were $1.5 billion. Leading farm commodities in *1965* were: Cattle, $671 million; hogs, $200 million; corn, $144 million; and wheat, $77 million.

NEVADA had 2,000 farms in 1966, of which about 75 percent were commercial. Average farm size was 4,400 acres. The State had a total of 8.8 million farmland acres, or about 13 percent of total land area. Average value of farmland and buildings was $248,100. Farm marketings in 1965 were $51 million; $42 million from livestock, $9 million from crops. Average gross income per farm was $26,377, net income per farm was $2,433. Total cash receipts from farming were $52 million. Leading farm commodities in *1965* were: Cattle, $31 million; milk, $7 million; and hay, $4 million.

NEW HAMPSHIRE had 5,000 farms in 1966, of which about 57 percent were commercial. Average farm size was 206 acres. The State had a total of 1 million farmland acres, or about 18 percent of total land area. Average value of farm land and buildings was $25,800. Farm marketings in 1965 were $53 million; $42 million from livestock, $11 million from crops. Average gross income per farm was $11,538, net income per farm was $1,572. Total cash receipts from farming were $54 million. Leading farm commodities in *1965* were: Milk, $21 million; eggs, $13 million; apples, $3 million; and cattle, $3 million.

NEW JERSEY had 11,000 farms in 1966, of which about 78 percent were commercial. Average farm size was 105 acres. The State had a total of 1.2 million farmland acres, or about 24 percent of total land area. Average value of farm land and buildings was $73,900. Farm marketings in 1965 were $265 million; $124 million from livestock, $142 million from crops. Average gross income per farm was $24,758, net income per farm was $5,931. Total cash receipts from farming were $270 million. Leading farm commodities in *1965* were: Milk, $55 million; eggs, $45 million; and tomatoes, $19 million.

NEW MEXICO had 14,600 farms in 1966, of which about 65 percent were commercial. Average farm size was 3,527 acres. The State had a total of 51.5 million farmland acres, or about 66 percent of total land area. Average value of farm land and buildings was $123,800. Farm marketings in 1965 were $258 million; $163 million from livestock, $95 million from crops. Average gross income per farm was $19,955, net income per farm was $5,969. Total cash receipts from farming were $280 million. Leading farm commodities in *1965* were: Cattle, $131 million; cotton, $45 million; milk, $15 million; and sorghum grain, $11 million.

NEW YORK had 66,000 farms in 1966, of which about 73 percent were commercial. Average farm size was 198 acres. The State had a total of 13.1 million farmland acres, or about 43 percent of total land area. Average value of farm land and buildings was $37,700. Farm marketings in 1965 were $939 million; $643 million from livestock, $296 million from crops. Average gross income per farm was $15,779, net income per farm was $4,671. Total cash receipts from farming were $959 million. Leading farm commodities in *1965* were: Milk, $481 million; cattle, $69 million; eggs, $62 million; apples, $42 million; and potatoes, $51 million.

NORTH CAROLINA had 183,000 farms in 1966, of which about 70 percent were commercial. Average farm size was 93 acres. The State had a total of 17.1 million farmland acres, or about 54 percent of total land area. Average value of farm land and buildings was $24,400. Farm marketings in 1965 were $1.2 billion; $410 million from livestock, $779 million from crops. Average gross income per farm was $7,375, net income per farm was $3,140. Total cash receipts from farming were $1.2 billion. Leading farm commodities in *1965* were: Tobacco, $455 million; broilers, $118 million; milk, $78 million; and cotton, $43 million.

NORTH DAKOTA had 48,000 farms in 1966, of which about 93 percent were commercial. Average farm size was 875 acres. The State had a total of 42 million farmland acres, or about 94 percent of total land area. Average value of farm land and buildings was $62,000. Farm marketings in 1965 were $665 million; $248 million from livestock, $417 million from crops. Average gross income per farm was $16,688, net income per farm was $5,453. Total cash receipts from farming were $781 million. Leading farm commodities in *1965* were: Wheat, $207 million; cattle, $167 million; barley, $76 million; and flaxseed, $45 million.

OHIO had 119,000 farms in 1966, of which about 65 percent were commercial. Average farm size was 151 acres. The State had a total of 18 million farmland acres, or about 69 percent of total land area. Average value of farm land and buildings was $49,100. Farm marketings in 1965 were over $1 billion; $672 million from livestock, $442 million from crops. Average gross income per farm was $10,702, net income per farm was $3,168. Total cash receipts from farming were $1.2 billion. Leading farm commodities in *1965* were: Milk, $216 million; cattle, $181 million; hogs, $168 million; soybeans, $115 million; and corn, $101 million.

OKLAHOMA had 84,000 farms in 1966, of which about 60 percent were commercial. Average farm size was 444 acres. The State had a total of 37.3 million farmland acres, or about 85 percent of total land area. Average value of farm land and buildings was $61,200. Farm marketings in 1965 were $741 million; $437 million from livestock, $304 million from crops. Average gross income per farm was $10,147, net income per farm was $3,099. Total cash receipts from farming were $817 million. Leading farm commodities in *1965* were: Cattle, $334 million; wheat, $160 million; and cotton, $56 million.

OREGON had 42,000 farms in 1966, of which about 54 percent were commercial. Average farm size was 505 acres. The State had a total of 21.2 million farmland acres, or about 34 percent of total land area. Average value of farm land and buildings was $62,000. Farm marketings in 1965 were $477 million; $206 million from livestock, $271 million from crops. Average gross income per farm was $12,654, net income per farm was $3,379. Total cash receipts from farming were $501 million. Leading farm commodities in *1965* were: Cattle, $103 million; wheat, $38 million; and milk, $43 million.

PENNSYLVANIA had 82,000 farms in 1966, of which about 64 percent were commercial. Average farm size was about 135 acres. The State had a total of 11.1 million farmland acres, or about 39 percent of total land area. Average value of farm land and buildings was $35,900. Farm marketings in 1965 were $826 million; $598 million from livestock, $228 million from crops. Average gross income per farm was $11,483, net income per farm was $3,104. Total cash receipts from farming were

$847 million. Leading farm commodities in *1965* were: Milk, $329 million; eggs, $96 million; and cattle, $96 million.

RHODE ISLAND had 1,200 farms in 1966, of which about 67 percent were commercial. Average farm size was 96 acres. The State had a total of 115,000 farmland acres, or about 17 percent of total land area. Average value of farm land and buildings was $53,000. Farm marketings in 1965 were $21 million; over $11 million from livestock, $10 million from crops. Average gross income per farm was $19,570, net income per farm was $2,442. Total cash receipts from farming were $21 million. Leading farm commodities in *1965* were: Milk, $6 million; eggs, $3 million; and potatoes, $3 million.

SOUTH CAROLINA had 63,000 farms in 1966, of which about 60 percent were commercial. Average farm size was 141 acres. The State had a total of 8.9 million farmland acres, or about 46 percent of total land area. Average value of farm land and buildings was $27,600. Farm marketings in 1965 were $418 million; $121 million from livestock, $297 million from crops. Average gross income per farm was $7,706, net income per farm was $3,112. Total cash receipts from farming were $445 million. Leading farm commodities in *1965* were: Tobacco, $88 million; cotton, $85 million; eggs, $35 million; and soybeans, $46 million.

SOUTH DAKOTA had 51,000 farms in 1966, of which about 91 percent were commercial. Average farm size was 880 acres. The State had a total of 45 million farmland acres, or about 92 percent of total land area. Average value of farm land and buildings was $63,500. Farm marketings in 1965 were $757 million; $598 million from livestock, $159 million from crops. Average gross income per farm was $16,822, net income per farm was $5,502. Total cash receipts from farming were $835 million. Leading farm commodities in *1965* were: Cattle, $356 million; hogs, $138 million; and wheat, $49 million.

TENNESSEE had 150,000 farms in 1966, of which about 57 percent were commercial. Average farm size was 107 acres. The State had a total of 16 million farmland acres, or about 60 percent of total land area. Average value of farm land and buildings was $21,400. Farm marketings in 1965 were $623 million; $319 million from livestock, $304 million from crops. Average gross income per farm was $5,090, net income per farm was $2,027. Total cash receipts from farming were $659 million. Leading commodities in *1965* were: Cotton, $110 million; cattle, $111 million; milk, $90 million; and tobacco, $90 million.

TEXAS had 196,000 farms in 1966, of which about 59 percent were commercial. Average farm size was about 786 acres.

The State had a total of 154 million farmland acres, or about 92 percent of total land area. Average value of farm land and buildings was $97,900. Farm marketings in 1965 were nearly $2.5 billion; $1.1 billion from livestock, $1.3 billion from crops. Average gross income per farm was $14,093, net income per farm was $4,622. Total cash receipts from farming were $2.7 billion. Leading farm commodities in *1965* were: Cattle, $694 million; cotton, $634 million; and grain sorghum, $261 million.

UTAH had 14,500 farms in 1966, of which about 61 percent were commercial. Average farm size was 931 acres. The State had a total of 13.5 million farmland acres, or about 26 percent of total land area. Average value of farm land and buildings was $71,500. Farm marketings in 1965 were $167 million; $129 million from livestock, $38 million from crops. Average gross income per farm was $12,774, net income per farm was $2,557. Total cash receipts from farming were $176 million. Leading commodities in *1965* were: Cattle, $46 million; milk, $29 million; sheep and lambs, $14 million; and turkeys, $13 million.

VERMONT had 10,800 farms in 1966, of which about 78 percent were commercial. Average farm size was about 264 acres. The State had a total of 2.8 million farmland acres, or about 48 percent of total land area. Average value of farm land and buildings was $27,400. Farm marketings in 1965 were $129 million; $115 million from livestock, $14 million from crops. Average gross income per farm was $12,747, net income per farm was $3,391. Total cash receipts from farming were $130 million. Leading farm commodities in *1965* were: Milk, $96 million; cattle, $12 million; forest products, $5 million.

VIRGINIA had 81,000 farms in 1966, of which about 58 percent were commercial. Average farm size was 159 acres. The State had a total of 12.9 million farmland acres, or about 51 percent of total land area. Average value of farm land and buildings was $32,000. Farm marketings in 1965 were $513 million; $268 million from livestock, $245 million from crops. Average gross income per farm was $7,417, net income per farm was $2,455. Total cash receipts from farming were $529 million. Leading farm commodities in *1965* were: Cattle, $70 million; tobacco, $84 million; milk, $86 million; and eggs, $37 million.

WASHINGTON had 50,000 farms in 1966, of which about 58 percent were commercial. Average farm size was 364 acres. The State had a total of 18.2 million farmland acres, or about 43 percent of total land area. Average value of farm land and buildings was $63,600. Farm marketings in 1965 were $637 million; $245 million from livestock, $392 million from crops. Average gross income per farm was $14,675, net income per farm was $4,472. Total cash receipts from farming were $677 million. Leading farm commodities in *1965* were: Wheat, $111 million; cattle, $95 million; milk, $85 million; and apples, $58 million.

WEST VIRGINIA had 36,000 farms in 1966, of which about 38 percent were commercial. Average farm size was 167 acres. The State had a total of 6 million farmland acres, or about 39 percent of total land area. Average value of farm and buildings was $15,700. Farm marketings in 1965 were $106 million; $82 million from livestock, $24 million from crops. Average gross income per farm was $3,825, net income per farm was $916. Total cash receipts from farming were $109 million. Leading farm commodities in *1965* were: Cattle, $26 million; milk, $23 million; broilers, $10 million; and apples, $9 million.

WISCONSIN had 121,000 farms in 1966, of which about 81 percent were commercial. Average farm size was about 175 acres. The State had a total of 21.2 million farmland acres, or about 61 percent of total land area. Average value of farm land and buildings was $27,400. Farm marketings in 1965 were $1.3 billion; $1.1 billion from livestock, $181 million from crops. Average gross income per farm was $11,346, net income per farm was $3,947. Total cash receipts from farming were $1.3 billion. Leading farm commodities in *1965* were: Milk, $654 million; cattle, $180 million; and hogs, $122 million.

WYOMING had 9,400 farms in 1966, of which about 83 percent were commercial. Average farm size was 3,798 acres. The State had a total of 35.7 million farmland acres, or about 57 percent of total land area. Average value of farm and buildings was $119,600. Farm marketings in 1965 were $174 million; $147 million from livestock, $27 million from crops. Average gross income per farm was $20,583, net income per farm was $3,974. Total cash receipts from farming were $183 million. Leading farm commodities in *1965* were: Cattle, $108 million; sheep, $20 million; sugarbeets, $8 million; and wool, $9 million.

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Page 9. In the last line of the first paragraph, the word "average" should appear before the words "farm income."

Page 22. The last sentence in the second paragraph should read: Because of increased per capita demand, food consumption in the less-developed countries has increased faster than food production in the past decade.

Page 66. The summary for Connecticut should give the total land area in farmland at about 30 percent; cash receipts from tobacco, $26 million.

Page 69. The summary for Kentucky, beginning the second line from top of page, should read: Average gross income per farm was $5,986; net income per farm, $2,553. Total cash receipts from farming were $743 million. Leading farm commodities in 1965 were: Tobacco, $255 million; cattle, $158 million; dairy products, $98 million.

Note: The Summaries of State Agriculture, beginning on page 65, are based on data available in January 1967. In August 1967, the USDA Economic Research Service published "Farm Income: State Estimates 1949-1966" (FIS 207 Supplement) which reports revised annual estimates for 1964-1966 in detail. Single copies of the 207 Supplement may be obtained free upon request to Division of Information, Office of Management Services, U. S. Department of Agriculture, Washington, D. C. 20250.